# MARINE REVIEW.

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## Outcome of the Insurance Struggle.

Chicago, April 21.—The struggle for insurance of lake hulls and cargoes during 1897 is practically at an end. New methods have been adopted and principles that apply to marine insurance the world over are being applied to the business on the lakes. No great revolution has taken place. Some of the firms that have been engaged in the business in the past have retained a part of the patronage which they held in previous years, but it must be plain to the vessel owner who has given attention to the developments of this season that the days of the general agent on the lakes have passed.

The best proof of this assertion is the success of the so-called McCurdy-Prime syndicate, and now that the bulk of the business for the coming season has been placed, a short reference to the conditions that have resulted in this new combination displacing some of the oldest firms on the lakes, will not be taken as an attempt to injure any of their competitors. The story is best told by one of the old Chicago general agents, who, although he suffered considerable loss himself on account of the combination, was inclined to give them credit for what they had accomplished.

"The new combination," he said, "has secured enough of the business this year to give them a strong hold on all lake business for the future, if they go along applying themselves strictly to the principles on which they have started out. This will be the case especially if their companies and the foreign underwriters whom they have brought into the pool are not unfortunate in encountering unusually heavy losses during the coming season. Geo. L. McCurdy and W. H. Prime are both very bright young men. McCurdy is an underwriter in every sense of the term, as he has been trained in the business from boyhood. He has been the balance wheel of the combination, on account of his knowledge of the lake business. Mr. Prime, on the other hand, brought important New York and London connections into the scheme, and he has the faculty of applying himself readily to problems of insurance that would seem to present most difficult complications. I have seen him go onto the Chicago board of trade and in the busiest hour hold the attention of men of wealth and influence whose time is valued by minutes.

"But efforts of this kind were only supplemental to well-defined plans on which this syndicate has been working for three years past. The new classification register, for which an expenditure of about $3,000 a month is being made, is a part of the general scheme which they have in hand. I gave them my insurance on my own boats, as it was plain to me three weeks ago, when they were first on the ground, with their pool effected, that they were going to secure the business. Their companies were satisfactory to me, and I do not think that anything that has been said against them on this score by solicitors who have gone out from Buffalo is prompted by such a man as Townsend Davis. He is too broad for anything of that kind. In fact I know of a case where a Chicago general agent was largely interested in a big wooden steamer, on which the managing owner started out to secure insurance. Two of the gentleman connected with the combination were also interested in the vessel, and there was, of course, a spirited struggle for the risk on this account. The managing owner took a rate from the combination, together with the names of their companies. He presented it to the general agent, who was entitled, as a stockholder in the boat, to the full information. This general agent is an authority on insurance, but he could make no objection to the companies that had been presented by the combination. He did the next best thing, however, and made a lower bid for the risk. But the combination made two reductions on subsequent rates which he named and finally secured the business. The managing owner who told me of this little game of see-saw between his stockholders was congratulating himself upon having underwriters interested in the vessel, but he refused to divulge the final rate. It was certainly not one in which there was any profit for either party."

A conversation with Mr. McCurdy, a few days ago, brought out further reference to the plans of the syndicate. In connection with the preparation of the classification register, they are making up a list of captains with a view to collecting a large amount of information regarding their records. This is not to be done in a few days, nor even in a few seasons, but it is intended that at some time in the future a board of practical vessel men, having supervision over questions that may arise regarding the qualifications of vessel masters, can be established and made to operate to the advantage of both owners and underwriters. Another feature of the general scheme which the syndicate has in hand, is that of having the underwriters look after their own interests in the matter of giving out information regarding new shoals and obstructions of all kinds. This will necessitate dealings with the government engineers and officials of the light-house board. These officers will be appealed to immediately upon a new shoal or rock being discovered, and will be asked to remove or mark it at the earliest possible moment. Mr. McCurdy has already taken this matter up with some of the government officials, and will appeal to vessel owners to have their captains assist in making reports of this kind that will be for the general welfare.

## Ships Ready But Little To Do.

It would be difficult to imagine a more discouraging outlook than that which confronts lake vessel owners who have made all preparations for beginning another season of navigation. Some of them are pursuing the right course. They have decided not to send out their vessels, or have given orders to lay up in Buffalo such of them as are forced to take to that port from Chicago grain that was loaded during the winter and which must be moved toward the seaboard. But the owners who are following this course are the exception rather than the rule, and the coming week will undoubtedly see the greater part of the lake fleet in motion, although practically no ore has been sold, and the grain movement from both Chicago and Duluth during the early months of the season is quite certain to be smaller than for several seasons past. The result will very probably be an effort on the part of the big freighters to move ore from Escanaba later on at 30 cents a ton, and the indications are that the coming month will witness on the lakes some of the lowest carrying charges on freight ever recorded in any part of the world. The situation would be entirely different if even the so-called wild carriers of the lake fleet could be held in port for another month, but experience has proven the inability of vessel owners to agree upon concerted action in anything of this kind. The ore companies that control large fleets of vessels, for which they are bound to first find employment, will begin sending them out about Monday of next week, and the individual vessel owners will in most cases follow suit, as in the past, without regard to the consequences.

Within the coming week some sales of ore, mostly of the highest Bessemer grade, will undoubtedly be made, but conditions in the iron industry will not admit of sales sufficient to make any material change in the outlook for vessels. These sales will not be sufficient to cause any great amount of chartering outside of the vessels of the ore companies, even if it should be admitted that vessel owners are anxious to make contracts on a basis of 70 cents from the head of Lake Superior.

In the meantime handling charges of all kinds are being scaled down. It is unofficially announced that the rail rate on ore from Gogebic range mines to Ashland has been reduced from 52 to 45 cents a ton, with a similar reduction from the Menominee range to Escanaba, while the rate from the Crystal Falls district to Escanaba is to be 48 cents, instead of a 57-cent rate that prevailed in the past. The charge for unloading ore from vessels at Ohio ports has been reduced from 16 to 14 cents. The laborers will probably be called upon to stand one cent of this reduction. There is no complaint from vessel owners because the reduction is not to 12 cents as at first proposed. In fact, it may be said truthfully that there are a large number of owners who see no special benefit in a reduction of this kind. It is certain to come out of the freight in the long run, and the gain simply goes to the consumer, along the line of lower prices for everything and nobody benefited in the long run. The ore shovelers who find work during only a part of the year are not well paid if all matters pertaining to their labor are taken into consideration. But prices are being scaled down everywhere and this is a part of the general order of things.

## Charles H. Cramp on American Shipping.

The last issue of the Review contained a report of a meeting of representative ship builders and ship owners of the United States, which was held at Washington on the 7th inst., in the rooms of the senate commitee on commerce. The object of this meeting, as well as other meetings of an executive committee selected to represent the various interests involved in the management and construction of ships, is to present to congress some measure of assistance for the merchant marine upon which the ship owners and ship builders of the country will be united. Mr. Chas. H. Cramp of the famous Philadelphia ship building firm was a leading figure at the Washington meeting, and a letter which he presented has since attracted attention all over the country. The letter in full is as follows:

"We have to deal with real facts and actual conditions. The interests of ship owning and ship building are identical, because no nation can successfully own ships that can not successfully build them. No nation can either build or own ships when, unprotected and unencouraged, it is brought in competition with other nations that are protected and encouraged. This is the existing condition of the ship owning and ship building interests of the United States. The resulting fact is that the enormous revenue represented by the freight and passenger tolls on our commerce and travel is constantly drained out of this country into British, German and French pockets, in the order named, but mainly British; while the vast industrial increment represented by the necessary ship building inures almost wholly to Great Britain. For this drain there is no recompense. It is sheer loss. It is the principal cause of our existing financial condition. So long as this drain continues, no tariff and no monetary policy can restore the national prosperity. Until we make some provision to keep at home, some part at least of the three hundred and odd millions annually sucked out of this country by foreign ship owners and ship builders, no other legislation can bring good times back again. It is a constant stream of gold always flowing out.

"The foreign ship owner who carries our over sea commerce makes us pay the freight both ways. For our exports we get the foreign market price, less the freight. For our imports we pay the foreign market price, plus the freight. No fine spun theory of any cloistered or collegiate doctrinaire can wipe out these facts. The fact that so long as the freight is paid to a foreign ship owner, so long will it be a foreign profit on a foreign product, is fundamental an unanswerable. The English steamship is a foreign product, and its earnings, which we pay, are a foreign profit. No sane man will argue that a foreign profit on a foreign product can be a domestic benefit. Add to this the fact, equally important, that the carrier of commerce controls its exchanges, and the condition of commercial, financial and industrial subjugation is complete. Such is our condition to-day. Great Britain has many outlying colonies and dependencies. The greatest two are India and the United States. She holds India by force of arms, whereby her control of that country costs her something. She has to pay something for her financial and commercial drainage of India. She holds the United States by the folly of its own people, whereby her control of this country costs her nothing. She has to pay nothing for her financial and commercial drainage of the United States. But the amount of her annual drainage of gold from the United States far exceeds that from India. Therefore, the United States is by far the most valuable of all the dependencies of Great Britain. In the relation of England to India there is something pitiable because India is helpless. In the relation of the United States to England there is nothing that is not contemptible, because it is the willing servitude of a nation that could help herself if she would.

"England is wide-awake to these conditions, and keenly appreciates their priceless value to her. The United States blinks at them, half dazed, half asleep, insensible of their tremendous damage to her. England, clearly seeing that, in this age more than ever before, ocean empire is world empire, strains every nerve to perpetuate her sea power and exhausts her resources to double rivet the fetters which it fastens upon mankind. Since 1885 England has expended $517,000,000 for new ships of war and their armament. During eleven years she has built thirty-eight first-class battleships, three second-class battleships, nine armored cruisers, twenty first class cruisers, fifty-one second-class cruisers, thirty-three third-class cruisers, thirty gunboats, twelve composite sloops, and seventy-four torpedo destroyers, including the vessels authorized in the current year's programme. The aggregate is 270 vessels, of 1,136,575 tons total displacement, and 1,674,700 horse power. Of the navy England already had in 1885 there remain available forty-two armored ships, thirty-four cruisers, eleven sloops, nineteen gunboats, and ninety-five torpedo boats, which she is re-engining, re-arming, and otherwise modernizing as rapidly as she can. In personnel afloat she has augmented her force from 52,600 in 1885 to 100,500 in the estimates for 1897. In other words, England has doubled her navy in personnel and material, and more than quadrupled it in warlike efficiency during eleven years of the profoundest peace the world ever saw.

"Even greater exertions has England put forth in the augmentation of her merchant marine. During the calendar year 1896 she added 1,380,000 tons of new steel shipping to her merchant fleet, breaking up meantime 530,000 tons of old and obsolete shipping which could no longer be operated profitably; a net addition of 850,000 tons to the total of her merchant marine by the register, but a practical addition of the whole 1,380,000 tons, because the 530,000 tons broken up had done its work for her aggrandizement and simply passed through the scrap heap and the mills into the new tonnage. No great fact can exist without a great reason. In recent years Germany on a large scale and in a systematic way, and this country on a small scale and in a spasmodic way have put forth efforts in the direction of sea power. England instantly takes alarm. To her the growth of any other sea power, even if its scope be comparatively small and its extent comparatively feeble, is a peril second only to the landing of an invading army in Kent. England has determined that she shall be not only the supreme sea power, but also that except within limits set by herself there shall be no other sea power at all. She will tolerate the growth of any other sea power only so far as the point at which it begins to affect her naval supremacy or dispute the ocean monopoly of her merchant marine. The moment any other national aspiration toward sea power reaches that point England must be prepared to crush it. She will crush it by intrigue, by cajolery, by treaties, if she can. She will crush it by force if she must.

"Ever since two first-class American ships were put in the transatlantic trade under American management every device of foul play that selfish ingenuity can invent, and every resort that unscrupulous rivalry can suggest have been exhausted by the English press and the English administration to defame and discredit them. English officials abroad, from ministers and consuls down, industriously reproduce in the newspapers of Japan, China, Chili, Argentine and Brazil, the misstatements of the English press about American vessels. The British postoffice delays the American mails for days in the slower ships of the Cunard line rather than send so much as one letter by the American line. Our postoffice responds by liberal allotments of its European mails to all the British lines. The result of all this is that while this country has never known such industrial stagnation and such financial distress, England has never known such industrial activity and financial prosperity as now.

"Does it not occur to men who look the least bit below the surface that the warfare for ocean empire and the strife for commanding sea power which England forces upon the rest of mankind have reached a stage so acute that her prosperity unalterably means the misery of everybody else, and that everybody's loss is inevitably her gain? What is the response of the United States to this tremendous exertion of English energy and resource to the aggrandizement of her sea power? To the English estimates for the current year for further increase of her navy amounting to £11,905,000, say $57,334,500, and a programme involving 108 new ships in all stages between laying down and completion, the United States responds by a sudden halt in even the comparatively feeble programme fitfully pursued since 1885, and a flat collapse of the policy of the new navy as a whole. To the 1,380,000 tons of new merchant shipping built by England during the past year, what will be the response of the United States?

"Now the future lies wholly in the hands of congress. From that quarter comes no sign. A tariff bill framed to produce revenue, and at the same time promote and encourage American industries, is to be passed. To greater or less extent this tariff is calculated to promote and encourage every American inudstry but two—ship owning and ship building. As I have already said, this ceaseless ebb of gold without compensation is the tribute this country pays to England, and it is paid through English ship owners. The United States has never been able to get any of it back except by borrowing it on bonds. England is keenly alive to these great economic facts and their results. Is the United States to be forever blind to them and their significance?"

## Speed and Cargo Records—Lake Freight Steamers.

The new steel steamer Andrew Carnegie, one of the first vessels to leave Lake Erie for Lake Michigan, has opened the season by breaking a cargo record. Cargoes of coal are seldom if ever as large as the grain or ore cargoes, and records in this line have not as yet reached the 5,000-ton mark, but the Carnegie was only three tons short of that figure. She has delivered at Sheboygan from Cleveland a cargo of 4,997 tons of bituminous coal and had in addition about 250 tons of fuel on leaving Cleveland. As her draft was only 15 feet forward and 15 feet 4 inches aft, it will readily be seen that the cargo was not within several hundred tons of her capacity, even in the Lake Superior trade. But this first cargo is an indication of what may be expected of the big freighters during the coming season. The Carnegie was built by the Cleveland Ship Building Co. for Capt. Thomas Wilson, and both owners and builders seem to be well pleased with her performance on this first trip. She is said to have made 12 miles an hour against half a gale all the way up from Lake Huron. Her engines are said to have reached ninety-four turns at one time, and it is reported that her speed with 175 pounds of steam on this short spurt was nearly thirteen miles an hour. Within a short time now, cargo records will be broken in all directions, and for the purpose of comparison the highest records of last season are printed herewith:

Iron Ore—Coralia, Mutual Transportation Co. of Cleveland, 5,088 gross or 5,699 net tons, Gladstone to Ashtbuala, draft of 16 feet 10 inches. From Lake Superior—Steamer Sir Henry Bessemer, Bessemer Steamship Co. of Cleveland, 4,637 gross or 5,194 net tons, Ashland to Conneaut, draft of 15 feet 9 inches.

Grain—Steamer Queen City, A. B. Wolvin of Duluth, 207,000 bushels of corn, equal to 6,210 net tons, Chicago to Buffalo, 16 feet 8 inches draft; steamer Maricopa, Minnesota Steamship Co., Cleveland, 191,700 bushels of corn, Chicago to Buffalo; steamer Zenith City, A. B. Wolvin of Duluth, 289,000 bushels of oats, Chicago to Buffalo. From Lake Superior—Steamer Queen City, A. B. Wolvin of Duluth, 156,256 bushels of barley and 58,000 bushels of wheat, equal to 5,490 net tons, Duluth to Buffalo.

Coal—Steamer Andrew Carnegie, Wilson Transit Co. of Cleveland, 4,997 net tons of bituminous coal, Cleveland to Sheboygan, draft of 15 feet 2 inches; schooner Geo. N. Hartnell, 4,777 net tons of anthracite, Buffalo to Milwaukee, draft 15 feet 5 inches.

Speed—Owego, Union Line of Buffalo, Buffalo to Chicago, 889 miles, 54 hours and 16 minutes, 16.4 miles an hour; Centurion, Hopkins Steamship Co. of St. Clair, Mich. Buffalo to Duluth, 997 miles, 65 hours and 10 minutes, 15.3 miles an hour.

## Time Under Check in the Sault River.

It will be convenient for vessel masters to learn at a glance the number of minutes required to cover certain distances in the St. Mary's river where speed is limited to seven miles an hour. This information is contained in the following table:

| | Distance in miles. | Times in minutes at seven miles an hour. |
|---|---|---|
| Mud lake buoy to Everens' point | 2¾ | 23½ |
| Everens' point to Dark Hole turn | 2½ | 21½ |
| Dark Hole turn to Rains' wharf turn | 3¼ | 28 |
| Rains' wharf turn to lower Hay lake turn (black can buoy) | 3¼ | 28 |
| Through lower Hay lake cut | 2¾ | 23½ |
| Upper Hay lake cut to light-house | 4½ | 38½ |
| Light-house to government dock | 1⅝ | 14 |

A steel keel cruising yacht—a sailing craft and the queen of the Atlantic schooner fleet—will be built by the Harlan & Hollingsworth Co. of Wilmington, Del., for Geo. W. Weld of Boston. The plans are by A. S. Chesebrough, who has gained a wide reputation as a designer of pleasure craft of this kind. The vessel is to be 135 feet over all, 104 feet on the water line, 26 feet beam and 14.9 feet draft, and she is to be finished in time for the August cruise of the New York Yacht Club.

The large single-sheet chart of Georgian bay, just issued by the British admiralty, was prepared from the surveys on which Staff Commander J. G. Boulton, R. N., has been engaged for several years past. This chart may be had from the Marine Review for $1.75. The price is higher than is usually charged for navigators' charts, but this one takes the place of probably ten sectional charts and is corrected up to date.

## Boilers in British Ships.

At a recent session of the Institution of Naval Architects and Engineers in London there was presented, as promised some time ago, two papers from officers of high rank in the British navy, who have been responsible for the adoption of water tube boilers in large vessels of war, and who are now coming out on top in a big fight against the cylindrical boiler interests of the country. One of the papers on "Recent Trials of the Cruisers Powerful and Terrible" was by Mr. A. J. Durston, engineer-in-chief of the navy. Mr. Durston in the course of his paper referred to the trials of the Belleville boilers on the Sharpshooter, and said that the results in regard to evaporation of water per pound of fuel in the cylindrical boiler were slightly under those with the Belleville, the trials showing that no disadvantage in point of economy would accrue from the use of the Belleville boiler. He referred at length to the trials of the boilers of the Powerful and Terrible, showing that they were in every way a success, fully realizing the expectations of the admiralty, practically no defects being developed. He considers that the small tube type of water tube boiler is suited for vessels requiring to realize a high power and speed for comparatively short periods, such as third-class cruisers and torpedo boats; but for larger vessels, which may have to serve continuously on distant stations, without extensive repairs to boilers, the large tube type of water tube boiler is regarded as the most suitable successor to the cylindrical boiler which has been employed under these circumstances. The endurance of these boilers is directly dependent on the thickness of the tubes and the facilities afforded in the design for examining and cleaning. The large tube boiler, with its initially thicker tubes, can submit to a greater amount of wastage without so materially impairing its efficiency or its life. Two torpedo gunboats are being fiitted up with Niclausse and Babcock & Wilcox boilers for the purpose of obtaining information as to their suitability for naval purposes. Mr. Durston submitted that the boilers of the Powerful and Terrible compared favorably with the old type of cylindrical boilers as regards consumption, endurance and facilities for examination, and that in all other respects for their particular application to the purposes of a war ship they are superior.

The second paper, dealing generally with water tube boilers in war ships, was by Rear Admiral C. C. P. Fitzgerald. He said that there never was a period during the development of boilers for war ships when their general behavior had been so unsatisfactory, and when they have given so much trouble and been the cause of so much anxiety as during the last ten or twelve years. The Scotch and marine locomotive type of boilers have proved unequal to the demands made on them for the greater pressures and quantities of steam required for the working of fast running triple expansion engines. It has, he said, been one long monotonous tale of leaky tube plates and seams, bulged fire-boxes, and generally more or less disabled and inefficient boilers. He referred to forced draught (without which, he said, a ship could not obtain her full power, or "legend" speed), and stated that in case of emergency a captain would not be able to use it because of the risk of a break-down. He dealt at length with the ability of water tube boilers to raise steam rapidly; their ability to make large and rapid increases of speed, and also large and rapid reductions without blowing off; their comparative safety; the facility for examination, cleaning, and repairs; the saving of weight; their evaporative efficiency; their ability to stand rough treatment; and the easier work for the stokers. The author said that he had been trying to find out something against the Belleville boilers, but he had not had much success.

An excellent chart of Green bay and approaches, on a large scale has just been published by the United States hydrographic office and may be had from the Marine Review. The chart is corrected to March 1, 1897, and takes in with Green bay the west shore of Lake Michigan from Manistique to Kewaunee. It will be of great value to masters of Lake Michigan trading vessels, as well as the men in charge of the larger ore and coal carriers trading to Escanaba. Soundings are in feet and there is a scale of statute miles attached. The price is $1.25, but the chart is so complete in detail that it is larger than the single sheet charts of Lake Superior or Lake Michigan.

Low Rates via the Nickel Plate road to New York city and return. Tickets will be on sale April 23d to 26th inclusive, account dedication of Grant's monument. Return limit May 5th. 29 Apl 23

## Around the Lakes.

The Sheriffs Manufacturing Co., Milwaukee, has just shipped two wheels, one 8 feet and one 8 feet 6 inches in diameter, to New Orleans; also a 6-foot wheel to Fitzsimmons & McConnell of Chicago.

At a recent meeting of the Chicago Steamship Co., Capt. William G. Keith was appointed general passenger agent. His office is on Sherman street. The company controls the steamer City of London.

Sixteen feet for the Sault canal and 14 feet for the Welland are the limits of draft officially announced in both cases. Official announcement is also made of preparations to open the Erie canal on Saturday, May 8.

P. M. Church of Sault Ste. Marie has again secured from the government a contract involving the care of Sault river buoys, at $2,725. Buoys in Portage lake and rivers will be cared for by McRae & Rowe of Houghton, at $690.

Soundings taken on the bar at the mouth of Sandusky bay show that the water there ranges from 15 feet 8 inches to 19 feet. A dredge now operating along the water front at that port will within a few days begin the work of removing the bar entirely, making the depth of water at the entrance of Sandusky bay about 25 feet.

J. H. Pauly of Milwaukee has sold the steamer Westover and barge A. T. Bliss to H. W. Cook of Chicago, and the latter has transferred his one-third interest in the steamers Thomas Davidson, Walter Vail and barge Baltic to Mr. Pauly. The deal is in the nature of a separation of interests. Mr. Pauly is now sole owner of the Davidson, Vail and Baltic.

Offers from Buffalo coal dealers to furnish steamboat fuel, said to be lump of the best grade, at $2 a ton are causing complaint along vessel owners, on account of the price of $2.10 fixed for fuel at Cleveland and Ohio ports east of Cleveland. They say that if the Buffalo dealers, who are at a big disadvantage in freights, can furnish the best steam coal at $2, the price at Ohio ports should be considerably below that figure.

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A vest pocket pamphlet just issued by the Marine Review contains appointments of captains and engineers for 172 fleets of vessels owned on the lakes. It is practically a complete list of vessels, owners, captains and engineers on the lakes, corrected to date and put in the most concise form that it is possible to arrange the several thousand names contained in such a collection. It is neatly bound and durable. Mailed to any address on receipt of $1.

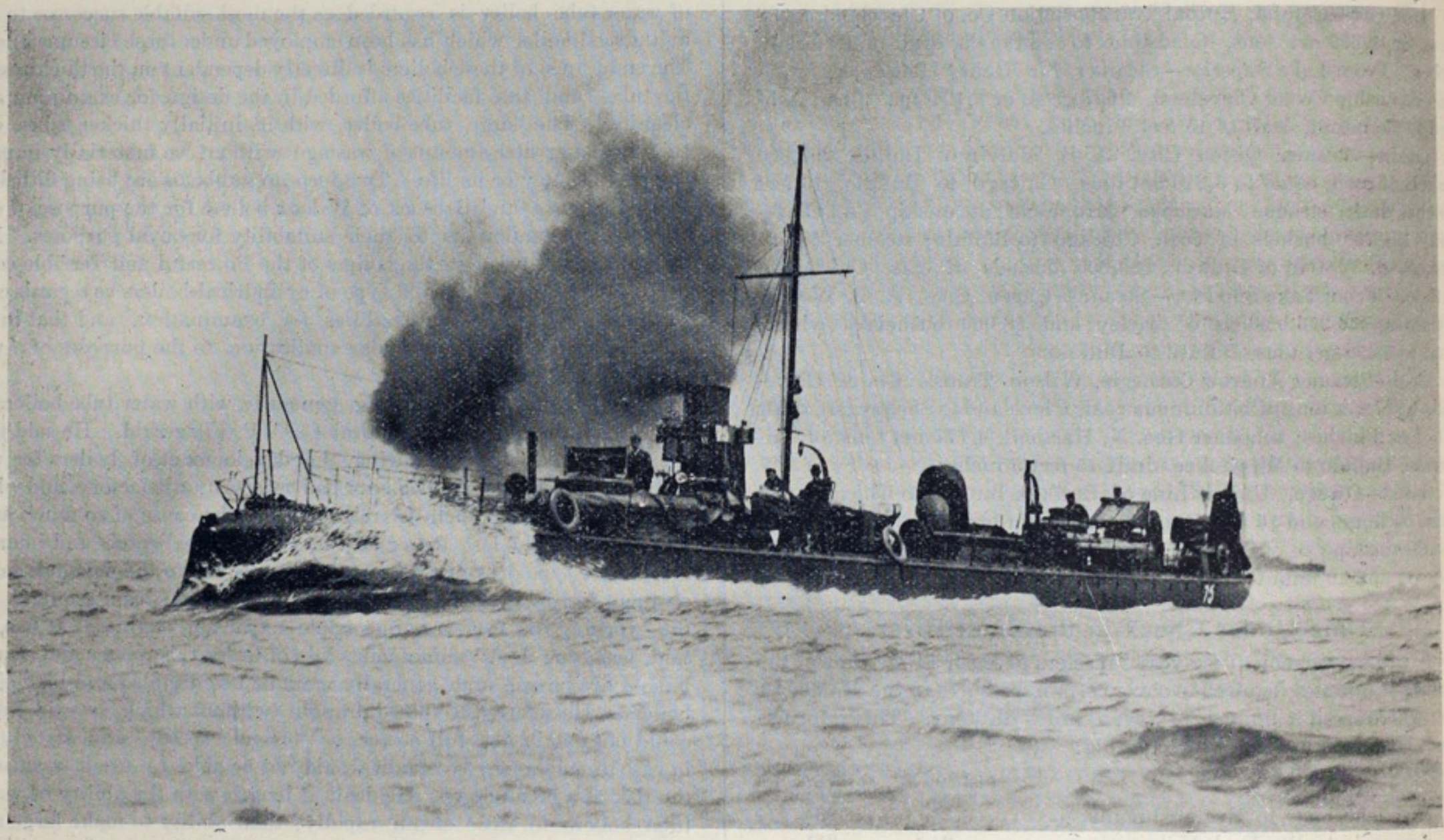
## In General.

A floating dock, recently completed by Blohm & Voss, ship builders of Hamburg, has a capacity of 17,500 tons and will accommodate sea-going ships of the largest type. It is 623 feet long and 118 feet wide.

Subscribers to the Review who wish to have it sent to them during the navigation season in care of the marine postoffice, Detroit, are requested to send in notification to that effect at once. It will be impossible to make changes in accordance with past seasons. Papers will be continued to old address unless orders to change are received.

Affairs of the Carnegie ore and coal railway (Pittsburg, Bessemer & Lake Erie Co.) are being placed up on a very solid financial basis. At a meeting of directors of the company, held recently at the general offices in the Carnegie building, Pittsburg, it was decided to issue general consolidation bonds in the sum of $10,000,000. With this issue, it is proposed to cancel all outstanding bonds of the two old companies, amounting to about $5,000,000, and complete the construction of the new road.

After forty-two years of service with the Atlantic Mutual Insurance Co, Mr. W. H. H. Moore has retired from the presidency and Mr. A. A. Raven has been elected to succeed him. Mr. Raven is also a veteran in the service of the company, as he has been conected with it for forty-six years. Other officers who have been conected with the company for thirty to forty years have been promoted as follows: Vice-president, Frederick A. Parsons; second vice-president, Cornelius Eldert; third vice-president, Theodore P. Johnson; secretary, J. H. Chapman.



LATE TYPE OF BRITISH TORPEDO BOAT CHASER.

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The Tobin & Hambler Mnfg. Co. of South Halsted and 22d street, Chicago, is building the steel dump scow for which the O. B. Green Dredge Co. of Chicago had plans prepared some time ago, and on which several of the lake builders were asked for bids.

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Now that the Lake Ontario grain movement will be increasing, masters will want Lake Ontario general chart No. 61 and coast chart No. 1, as well as St. Lawrence river charts Nos. 4, 5 and 13. The five will be sent by the Review to any address by express for $2.

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Appointments of captains and engineers for 1897, vest pocket size, $1.00. Order from the Marine Review, Cleveland, Ohio.

## Ship Yard Matters.

The new steel barge Constitution , which was illustrated and described in the last issue of the Review, was launched at the ship yard of the American Steel Barge Co., West Superior, yesterday (Wednesday) afternoon. The launch was delayed a few days longer than was necessary on account of the ground under the vessel being frozen as hard as rock. A correspondent reminds the Review that in the descerip-tion of this vessel no reference was made to her steam towing machine, and that it was hardly right to refer to her as an up-to-date vessel without speaking of this machine. The West Superior yard has certainly had its share of repair work this spring. The dry dock was opened on the 16th inst., and the steamers Stewart and Colgate Hoyt were immediately taken in, the Hoyt getting a new wheel. They were followed in the dock by the whaleback steamer Wilson and the tug Edna G. The steamer Frank Rockefeller will also get a new wheel, and extensive repairs are going on in the yard on the wooden steamers Fedora and Neshoto. Some repairs on the steamer Rees were also made during the week. Orders from Pickands, Mather & Co. are to have all of their vessels out by the 25th inst. It is now the intention to launch on Saturday, May 1, the whaleback barges 201 and 202, which were brought here from the coast and lengthened during the winter.

On account of a very large amount of repair work at the yard of the Union Dry Dock Co., Buffalo, the completion of new vessels has been considerably delayed. The big oil barge for the Standard company is now practically completed, however, and the work of plating the new Union Line steamer Starucca has been going on quite rapidly of late. The new steel tug for the Erie tug line is partly in frame. This tug will be 87 by 21 by 11½ feet and will have compound engines of 16 and 32 inches cylinder diameters by 28 inches stroke. In addition to this new work, the Union company is also building two steel dump scows, 200 feet long, 25 feet beam and 12 feet deep, for Dunbar & Sullivan. The scows will be used on the breakwater extension work at Buffalo and will cost about $16,000 each.

Engineers who have been at work at Duluth, under the direction of Miers Coryell, making repairs to engines and boilers of the Northern line passenger steamers North West and North Land, are nearing the end of their task. They had steam up on one of the vessels, a few days ago. It is confidently expected that these steamers will be in shape during the coming season to maintain their schedule time without difficulty, as men acquainted with the Belleville type of water tube boilers will be in charge of the engine and boiler rooms, and it is the intention to make the forces in both of these departments more efficient than they have been in the past.

The steamer Lora, which has just gone into commission after having her length increased 36 feet at the south yard of the Milwaukee Dry Dock Co., will hereafter be known as the Alice Stafford. She is practically a new vessel. The Stafford will go into the Soo line, plying between Gladstone and Georgian bay in connection with the Canadian Pacific railway. The capacity of the craft in her enlarged form, and with the additional room gained by the removal of one of the two boilers which she had been carrying, is placed at 900 tons.

The Frontier Iron Works of Detroit has just received an order from the E. J. Codd Co. of Baltimore for castings and drawings for compound tug engines, 15 and 30 by 26 inches, the same as those designed and built by the Detroit firm some time ago for Capt. James Davidson of West Bay City. Mr. Codd, the senior member of the Baltimore firm, expresses the opinion that the engine is superior in design, both for convenience and efficiency, to any engine of similar dimensions built by eastern engine building concerns.

Venezuela is the name selected for Capt. James Davidson's latest wooden steamer. Her tonnage is 2,125.00 gross and 1,733.24 net, and the official number is 161,786. Tonnage of other new lake vessels: Steel steamer Andrew Carnegie, 4,106.55 gross and 3,067.56 net; steel tow barge Constitution, 3,231.30 gross and 2,997.76 net. The official number of the Carnegie is 107,267 and that of the Constitution, 127,175.

The Globe Iron Works Co., Cleveland, is hurrying the completion of the alterations in the steel steamers Parks Foster and Ira Owen, which are to be the principal vessels of the new B. & O. package freight line between Chicago, Milwaukee and Fairport. When fitted with gangways and hoisting apparatus, at an expense of about $5,000 each, the Foster and Owen will make very handy vessels for this trade.

## Chicago's Great Ship Yard.

Chicago, April 21.—Within the past few months the Chicago Ship Building Co. has been using machinery on 15 to 20 per cent. of hull riveting work. They have just put in pneumatic riveters of a kind that have proved highly successful, and at least three other yards on the lakes are now preparing for the adoption of these machines. The South Chicago yard has certainly been turning out ships of late at a rate that has never before been equaled on the lakes. The steel barge Carrington, built for C. W. Elphicke & Co. of Chicago, was delivered twelve days ahead of time, the builders earning a premium of $100 per day, and now it is expected that the two package freight steamers Minneapolis and St. Paul, building for Robert R. Rhodes and others of Cleveland, will both be delivered on May 1, although the first of them is not due until the 10th of May, with the second one not due until the 23d. It is understood that premiums of $100 a day will be paid on these vessels also, as against a like penalty if they had not been delivered on time. The St. Paul and Minneapolis have not as yet left the stocks, but they are to be launched on Saturday of this week, within an hour of each other, and when they leave the ways they will be practically ready for sea. These two steamers might be launched at the same instant without great difficulty, but General Manager Babcock says that the mere novelty of such a performance does not warrant his company in taking chances on difficulties that might result from it. A double launch of this kind was undertaken recently at the ship yard of the Union Iron Works, San Francisco, and as the vessels were launched endwise and quite close to each other, they came together after going into the water. Instances of two vessels launched from a single yard within a few hours of each other have not been numerous in this country. In this case the interval is to be but one hour , the Minneapolis being the first to go into the water at 2:30 in the afternoon and the St. Paul at 3:30. It has been suggested that the launching ceremonies might be appropriately performed by a young woman for each of the northwestern cities honored by the naming of the steamers. In the early fifties three schooners, sister ships, named White Squall, White Cloud, and Flying Cloud, were launched on the same day from the yards of John Oades, at Clayton, N. Y. Early in the spring of 1893, when the passenger whaleback Christopher Columbus was launched, a whaleback freighter was also sent sliding down the ways at the ship yard of the American Steel Barge Co., West Superior. Although the Minneapolis and St. Paul are of modern construction in every respect, they do not belong to the largest class of freighters on the lakes, but are built to be able to pass through the Welland canal into Lake Ontario. They are just the size of the locks, and with the exception of the depth of hold are the same size as the steamers of the Ogdensburg Transit Co.'s fleet. They will enter the service of the Soo line, running between Gladstone and Buffalo in the flour and general merchandise trade. With these two steamers in commission, there will be left at the Chicago yard only one tow barge, out of three steamers and two barges that have been under construction there during the winter. The remaining barge is the Amazon, building for James Corrigan of Cleveland. She is as yet only partly in frame, but in view of the large force that can be put to work on her, Mr. Babcock says that there is no doubt of her completion before July 1, the date fixed for delivery. But most important of all the work at this ship yard, is the big steamer Crescent City, built for A. B. Wolvin and others of Duluth, and which is equipped with quadruple expansion engines and Babcock & Wilcox water tube boilers. This steamer is also completed, and it is expected that she will leave on Friday of this week. The management of the Chicago company is especially interested in the success of this vesesel, as they certainly made a bold step in undertaking the construction of big marine engines, equal to the finest that are to be found in freight steamers throughout the world, with only parts of a machine shop to carry out their plans. But they now have everything arranged to begin immediately the erection of a machine shop with a part of the ship yard force that will be available at the close of the present week. The dry dock is also to be enlarged during the summer, the plans providing for the largest dock on the lakes. In addition to the several new vessels here referred to, the Chicago company has also enlarged Capt. John Green's steamer Lewiston during the winter, and she is now ready for service with 48 feet 4 inches added to her length.

The Nickel Plate road offers tickets to New York city and return at excursion rates April 23d to 26th. Inquire of agents of the Nickel Plate road for information. 32 Apl 23

MARINE REVIEW

DEVOTED TO LAKE MARINE AND KINDRED INTERESTS.

Published every Thursday at No. 409 Perry-Payne building, Cleveland, Ohio, by John M. Mulrooney and F. M. Barton.

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The books of the United States treasury department on June 30, 1896, contained the names of 3,333 vessels, of 1,324,067.58 gross tons register in the lake trade. The number of steam vessels of 1,000 gross tons, and over that amount, on the lakes on June 30, 1896, was 383 and their aggregate gross tonnage 711,034.28; the number of vessels of this class owned in all other parts of the country on the same date was 315 and their tonnage 685,204.55, so that more than half of the best steamships in all the United States are owned on the lakes. The classification of the entire lake fleet on June 30, 1896, was as follows:

| | Number. | Gross Tonnage. |
|---|---|---|
| Steam vessels | 1,792 | 924,630.51 |
| Sailing vessels and barges | 1,125 | 354,327.60 |
| Canal boats | 416 | 45,109.47 |
| Total | 3,333 | 1,324,067.58 |

The gross registered tonnage of the vessels built on the lakes during the past six years, according to the reports of the United States commissioner of navigation, is as follows:

| | | |
|---|---|---|
| Year ending June 30. 1891 | 204 | 111,856 45 |
| " " " 1892 | 169 | 45,968.98 |
| " " " 1893 | 175 | 99,271.24 |
| " " " 1894 | 106 | 41,984.61 |
| " " " 1895 | 93 | 36,352.70 |
| " " " 1896 | 117 | 108,782.38 |
| Total | 864 | 444,216.36 |

ST. MARY'S FALLS AND SUEZ CANAL TRAFFIC. (*From Official Reports of Canal Officers.*)

| | St. Mary's Falls Canal. | | | Suez Canal. | | |
|---|---|---|---|---|---|---|
| | 1895* | 1894 | 1893 | 1895 | 1894 | 1893 |
| No. vessel passages | 17,956 | 14,491 | 11,008 | 3,434 | 3,352 | 3,341 |
| Tonnage, net registered | 16,806,781 | 13,110,366 | 9,849,754 | 8,448,383 | 8,039,175 | 7,659,068 |
| Days of navigation | 231 | 234 | 219 | 365 | 365 | 365 |

* 1895 figures include traffic of Canadian canal at Sault Ste. Marie, which was about ½ per cent. of the whole, but largely in American vessels.

There has never been a time when there has been issued by the light-house officials on the lakes so many notices of new lights, fog signals etc., as are being established with the opening of navigation this spring. These new aids to navigation are the fruits of the efforts that have been made in this direction for three or four years past by executive officers of the Lake Carriers' Association, who have made many trips to Washington and have been especially successful in their dealings of late with the light-house board. And now that a large number of gas buoys, the aids most suitable to lake navigation, are being established, it may be well to remind vessel masters that they are warned to exercise the greatest possible care in avoiding contact with these buoys. It is probably unnecessary to say that they are not like an ordinary can or spar buoy that could readily be replaced by a new one if carried away. On the contrary, they are very expensive in construction, and the patents under which the manufacture of them is controlled by one concern in this country makes them even more costly than their appearance would indicate. Then, too, the government is placed at a heavy expense in fitting light-house vessels with tanks for storing and supplying gas to these buoys, and the labor attending the care of them is another important item. On this account it is announced that with the establishment of these buoys the light-house officials will adopt a new and severe policy in dealing with offenders in this regard. Masters of long tows and vessels towing rafts must be especially careful. Not only will the courts be resorted to in cases of criminal carelessness, but buoys badly damaged will be withdrawn from their stations and the entire lake marine will be compelled to suffer the loss of assistance afforded by them. If carelessness is proven and these buoys are not readily replaced on their stations the light-house officials can not be criticized. It therefore behooves every vessel owner and vessel master to join in the movement to protect these new aids to navigation, and to begin early by investigation of the first case of carelessness reported in connection with them.

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Ex-Congressman John M. Farquhar of Buffalo is said to have a great many endorsements for the position of commissioner of navigation. Mr. Farquhar may be fitted for this position, but it is more than probable that his connection with politics in the past will be used as an argument against his appointment. It is certain that, if a change is to be made in this office, such lake influences as can be brought to bear upon the president will discourage the appointment of a politician, and will favor the selection of a young man, possessed of business qualifications, who can take up the work of the office along the lines on which it has been conducted by the present incumbent. Who cares, as far as the office of commissioner of navigation is concerned, whether Mr. Farquhar, for instance, is an advocate of bounties for ships, or whether some other candidate for the place has not been prominent in the discussion of this subject? The influence of the commissioner of navigation should be of no importance on either side of this question, and no matter what may have been the case in the past, his time should not be given almost entirely, as it often has been, to biased reports on account of the politics of the administration under which he is serving. The office in its dealings with vessel owners, even under our present limited shipping interests, presents opportunity for more work of the kind that has been done by Mr. Chamberlain and less politics than has characterized its affairs in the past.

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Every preparation is being made by lake representatives of the Carnegie company and the management of the Rockefeller vessels for an immense output of ore from their two Mesabi properties—Oliver and Mountain Iron—and it would not be surprising if shipments from these two mines come nearer to 2,000,000 tons than the minimum of 1,200,000 tons provided for in leases. It is said that there is now on the way to the Mountain Iron mine a 90-ton steam shovel that will mine about 5,000 tons of ore every ten hours, and which will be used in addition to the present equipment. This shovel is supposed to embody some improvements on any now in use on the Mesabi, and it will mine ore at an incredibly low cost. The Oliver equipment is capable of mining not very far from 10,000 tons a day.

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Another marine wonder, Bazin's roller steamboat, which was to make thirty knots an hour and revolutionize the transatlantic passenger service, has suffered a severe set-back. Dispatches regarding recent trials of an experimental boat of this type in French waters are to the effect that they are very discouraging, the engines not proving powerful enough. Their power was nearly trebled after early trials, but the increased weight submerged the rollers so deep that they turned only ten times a minute instead of forty. The rollers threw up such quantities of water behind that each acted like a brake and reduced the thirty knots an hour to six or seven. Rubber scrapers are being experimented with to prevent the upheaval of the water.

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The movement in Washington to invesitgate and probably curtail the powers of the civil service commission will undoubtedly meet with support from a large class of people throughout the country who favor civil service regulations but who are opposed to the extremes to which the commission has extended its powers. Applicants for positions in the life saving service, for instance, must wonder why a lack of knowledge in grammar, algebra or mathematics should disqualify them from facing a roaring surf and rendering assistance to the unfortunate crew of a stranded vessel. Civil service rules of this kind are simply ridiculous.

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Prices of some of the principal Lake Superior ores established by the old range pool are as follows: Minnesota, $3.11; Chandler, $2.92½; Pioneer, $2.87; Norrie, $2.65; Aurora, $2.80; Ashland, $2.66; Tilden, $2.56; Montreal, $2.77; Chapin, $2.40; Republic, Specular, $3.17; Republic, special, $3.40; Lake Superior, low phosphorus, $3.42; Lake Angeline, hard, $3.46; Angeline, hematite, $2.82. The basis of Mesabi Bessemers is $2.40 on Fayal ore. Some ores on that range will go somewhat higher, these including Franklin, Biwabik and the Lake Superior group.

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What is said to be the largest chain ever made has been forged at the Tipton Green chain works for the British admiralty. It is a sling chain, close-linked, of 3 13-16 iron, and side welded. There is no testing machine strong enough to break it, but it is to be tested to about 400 tons. It is to be used for lifting ingots and armor plates.

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The Review is officially informed from Ogdensburg that there is no truth in the rumors of the Ogdensburg Transit Co. having severed its relations with the Vermont Central Railroad. The transit company will be operated between Ogdensburg and western lake ports as heretofore.

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Excursion rates to New York city are on sale April 23, 24, 25 and 26 via theNickel Plate road. Ask agents for detail. 31 Apl 23

## The Little Stow-Away.

"Would ye like to hear about it?" I eagerly assent, and the narrator, knocking the ashes out of his pipe, folds his brawny arms upon the top of the rail, and commences as follows:

" 'Bout three years ago, after I got this berth as I'm in now, I was second engineer aboard a Liverpool steamer bound for New York. There'd been a lot of extra cargo sent down just at the last minute, and we'd no end of a job stowin' it way, and that ran us late o' startin'; so that, altogether, you may think, the cap'n warn't in the sweetest temper in the world, nor the mate neither; as for the chief-engineer, he was an easy-goin' sort of a chap, as nothing on earth could put out. But on the mornin' of the third day out from Liverpool he cum down to me in a precious hurry, lookin' as if somethin' had put him out pretty considerably.

" 'Tom,' says he, 'what d'ye think? Blest if we ain't found a stow-away.' (That's the name, you know, sir, as we gives the chaps as hide theirselves aboard outwardbound vessels, and gets carried out unbeknown to everybody).

" 'The dickens you have,' says I. 'Who is he, and where did you find him?'

" 'Well, we found him stowed away among the casks for'ard; and ten to one we'd never ha' twigged him at all, if the skipper's dog hadn't sniffed him out and began barkin'. Such a nice little mite as he is, too. I could ha' most put him in my baccy-pouch, poor little beggar. But he looks to be a good p'ucked un for all that.' I didnt' wait to hear no more, but up on the deck like a sky-rocket; and there I did see a sight and no mistake. Every man-Jack o' the crew, and what few passengers we had aboard, was all in a ring on the fo'c'stle, and in the middle was the fust-mate, lookin' as black as thunder. Right in front of him, lookin' a reg'lar mite among them big fellers, was a little bit o' a lad not ten year old—ragged as a scare-crow, but with bright, curly hair, and a bonnie little face o' his own, if it hadn't been so woful thin and pale. But, bless your soul, to see the way that little chap held his head up, and looked about him, you'd ha' thought the whole ship belonged to him. The mate was a great hulkin' black-bearded feller, with a look that'ud ha' frightened a horse, and a voice fit to make one jump through a key-hole. But the young un warn't a bit afeared. He stood straight up, and looked him full in the face, with them bright, clear eyes o' his'n, for all the world as if he was a prince. Folk did say afterwards,"—lowering his voice to a whisper—"as how he comed o' better blood nor what he seemed; and, for my part, I'm raythor o' that way o' thinkin' myself; for I never yet seed a common street harab—as they calls them now—carry it off like him. You might ha' heered a pin drop, as the mate spoke.

" 'Well, you young whelp,' says he, in his grimmest voice, 'what's brought you here?'

" 'It was my step-father as done it,' says the boy, in a weak little voice, but as steady as could be. 'Father's dead, and mother's married again, and my new father says as how he won't have no brats about eatin' up his wages; and he stowed me away when nobody warn't lookin', and guv me some grub to keep me goin' for a day or two till I got to sea. He says I'm to go to Aunt Jane at Halifax; and here's her address.' And with that, he slips his hand into the breast of his shirt, and out with a scrap o' paper, awful dirty and crumpled up, but with the address on it, right enough.

" 'We all believed every word on't, even without the paper; for his look and his voice, and the way he spoke, was enough to show that there warn't a ha'porth o' lyin' in his whole skin. But the mate din't seem to swallow the yarn at all; he only shrugged his shoulders with a kind o' grin, as much as to say, 'I'm too old a bird to be caught by that kind o' chaff;' and then he says to him: 'Look here, my lad, that's all very fine, but it won't do here. Some o' these men o' mine are in the secret, and I mean to have it out o' 'em. Now, you just point out the man as stowed you away and fed you, this very minute; if you doan't, it'll be the worse for you'

"The boy looked up in his bright, fearless way, (it did my heart good to look at him, the brave little chap), and says, quietly: 'I've told you the truth; I ain't got no more to say.'

"The mate says nothin', but looks at him for a minute, as if he'd see clean through him; and then he faced round to the men, looking blacker than ever. 'Reeve a rope to the yard,'' he sings out, loud enough to raise the dead, 'smart, now.' The men all looked at each other, as much as to say: 'What on earth's a-comin' now?' But aboard ship, o'course, when you are told to do a thing, you've got to do it; so the rope was rove in a jiffy. 'Now, my lad,' says the mate, in a hard, square kind o' voice, that made every word seem like fittin' a stone into the wall, 'you see that 'ere rope? Well, I'll give you ten minutes to confess; and if you don't tell the truth afore the time's up, I'll hang you like a dog!' The crew all stared at one another as if they couldn't believe their ears (I didn't believe mine, I can tell ye), and then a low growl went among 'em, like a wild beast awakenin' out of a nap.

" 'Silence, there!' shouts the mate, in a voice like the roar of a nor'easter. 'Stand by to run for'ard!', as he held the noose ready to put around the boy's neck. The little feller never flinched a bit; but there was some among the sailors (big strong chaps, as could ha' felled an ox) as shook like leaves in the wind. As for me, I bethought myself o' my little curly-haired lad at home, and how it 'ud be if any one was to go for to hang him; and at the very thought on't I tingled all over, and my fingers clinched theirsleves as if they was a-grippin' somebody's throat. I clutched hold o' a hand-spike, and held it behind my back all ready.

" 'Tom,' whispers the chief-engineer to me, 'd'ye think he really means to do it?'

" 'I don't know,' says I, through my teeth; 'but if he does, he shall go first, if I swings for it!' I've been in many an ugly scrape in my time, but I never felt 'arf as bad as I did then. Every minute seemed as long as a dozen; an' the tick o' the mate's watch, reg'lar, pricked my ears like a pin. The men were very quiet, but there was a precious ugly look on some o' their faces; an' I noticed that three or four on 'em kept edgin' for'ard to where the mate was, in a way that meant mischief. As for me, I'd made up my mind that if he did go for to hang the poor little chap, I'd kill him on the spot, and take my chance.

" 'Eight minutes,' says the mate, his great deep voice breakin' in upon the silence, like the toll o' a funeral bell. 'If you've got anything to confess, my lad, you'd best out with it, for ye're time is nearly up.'

" 'I've told ye the truth,' answers the boy, very pale, but as firm as ever. 'May I say my prayers, please?'

The mate nodded, and down goes the little chap on his knees and puts up his poor little hands to pray. I couldn't make out what he said (fact my head was in such a whirl that I'd hardly ha' knowed my own name), but I'll be bound God heard it, every word. Then he ups on his feet again, and puts his hands behind him, and says to the mate quite quietly: 'I'm ready!' And then, sir, the mate's hard, grim face broke up all at once, like I've seed the ice in the Baltic. He snatched up the boy in his arms, and kissed him, and burst out a-cryin' like a child; and I think there warn't one of us as didn't do the same. I know I did for one.

" 'God bless you, my boy!' says he, smoothin' the child's hair with his great hard hands. 'You wouldn't tell a lie to save your life! Well, if so, be as yer father's cast yer off, I'll be yer father from this day forth; and if I ever forget you, then may God forget me!'

"And he kep' his word, too. When we got to Halifax he found out the little un's aunt, and gave her a lump o' money to make him comfortable; and now he goes to see the youngster every voyage, as reg'lar as can be; and to see the pair on 'em together—the little chap so fond of him, and not bearin' him a bit o' a grudge—it's bout as pretty a sight as ever I seed. And now axin' yer parding, it's time for me to be goin' below; so I'll just wish yer good-night."—Sailors' Magazine.

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"Digests of Physical Tests and Laboratory Practice" is the name of a new quarterly publication in which the Riehle Bros. Testing Machine Co. is interested. It is evident, however, that the magazine is to be published independent of the affairs of the well-known Philadelphia manufacturers of testing machinery, as the several numbers that have thus far appeared have contained valuable articles from officers of the United States navy, as well as leading engineers throughout the country. This publication should prove of much importance to the engineering profession. Frederick A. Riehle of 1424 N. Ninth street, Philadelphia, is the publisher, and Joseph W. Bramwell, editor.

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On April 23, 24, 25 and 26, the Nickel Plate road will sell excursion tickets to New York, to enable its patrons to attend the dedication of Grant's monument. Return limit May 5th. Ask agents for time of trains and raets. 30 Apl 23

## Uses of Electricity Aboard Ships.

Electricity is broadening its scope of usefulness on board ship from year to year. While at first it was only recognized as the most superior agent for illumination over any other method, it has from time to time been extended to so many uses that it would be well nigh impossible to enumerate all of them from memory. The steamers St. Louis and St. Paul, for which the whole electrical equipment was designed and furnished by the Electro-Dynamic Co. of Philadelphia, are good examples of the multiplicity of uses that electricity has been put to on board ship during late years. These Atlantic express steamers each have an aggregate of 1,800 incandescent lamps of sixteen candle power, and electricity is used on them also for the following purposes: Motors driving Sturtevant fans for heating and ventilating purposes; motors for driving the refrigerating machines; motors for running provision elevators and hoisting ashes from the boiler rooms; motor transformers supplying current to electric bells and annunciator systems; electrical apparatus for blowing whistle and controlling running lights; for electric cooking in deck pantries; electric windlass and capstan telegraphs; electric rudder indicator, showing angle of rudder in pilot house; electric revolution indicators, showing the exact speed and direction of each engine at any instant in the chief engineer's room and on the bridge.

The Electro-Dynamic Co. of Philadelphia controls the patent rights of the last mentioned inventions and have furnished apparatus, among many others, to the following vessels: Steamers New York, Paris, Friesland, Grand Duchess, Oriole, Atalanta, Margarita, United States cruiser Brooklyn, etc. These apparatus are not only giving perfect satisfaction to the masters of these vessels, but have become practically indispensible to them.

The Philadelphia company has been in business for seventeen years and is making a specialty of marine electrical equipments. At the present time they are furnishing the complete electrical outfit for the Holland submarine torpedo boats building at the Crescent Ship Yard, Elizabethport, and the Columbian Iron Works, Baltimore. Their portable electric drills can be seen in operation in all the large ship yards of the country.

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Supplies of two of the finest charts ever seen on the lakes have recently been received by the Marine Review. One covers Green bay entire and the other takes in all parts of Georgian bay. Both are on a large scale and both are corrected up to date. The Georgian bay chart is one of the results of the British survey which has been going on for several years past.

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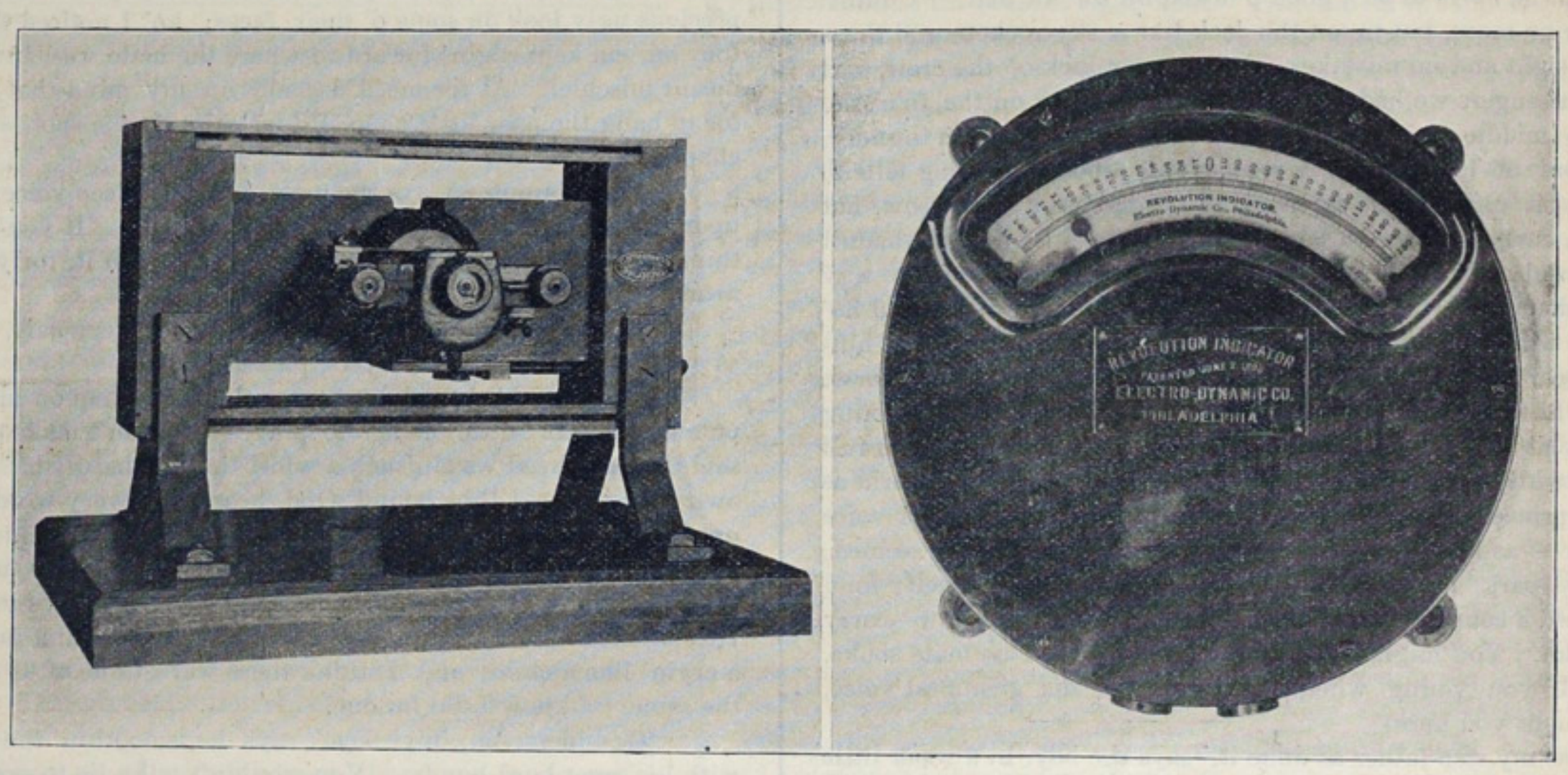
During May the Nickel Plate road will inaugurate an improved passenger train schedule of three solid through trains daily. In addition to the through vestibuled sleeping car service between Chicago, Buffalo, New York and Boston, via the West Shore and Fitchburg railroads, a daily New York sleeper will be placed in service via the D. L. & W. R. R. 26-Apl-30.

## Some Methods, Here and Abroad.

A comparison of the different methods aboard vessels of doing what is practically the same thing in various parts of the world is both interesting and amusing to the thoughtful observer. On American ferry boats the import is well known of the "ting-ting" or "jingle-jingle" of the bell by which the man in the wheel house communicates with his fellow mortal in the engine room. On the Thames, however, it would be considered practically impossible to convey information in this manner, and the captains of the small paddle steamers on that stream stand on the paddle boxes and sing out "Ease 'er!" "Back 'er" etc., apparently to nobody in particular, while these interesting remarks are promptly repeated in shrill tones by a small boy into a speaking tube which communicates with the lower regions. On the Seine, in France, this process is simplified, and a large trumpet-shaped mouthpiece flares out in front of the man at the wheel, and he yells his commands into this funnel, the other end of which is supposed to reach the engineer. The large steamers on the Rhine, in Germany, are controlled, not by the usual wheel placed in a wheel house forward, but by a very large wheel on a vertical axis, placed right amidships upon an elevated platform or bridge, and several men pass the handles from right to left, or upon occasion trot round in a circle, and it would doubtless be considered a serious temptation of Providence, or at least a reflection upon the Fatherland, if any one were to attempt to construct a Rhine steamer with the ordinary form of steering gear.—Cassier's Magazine.




ELECTRIC REVOLUTION INDICATOR.

## Stocks of Grain at Lake Ports.

The following table, prepared from reports of the Chicago board of trade, shows the stocks of wheat and corn in store in regular elevators at the principal points of accumulation on the lakes, April 17, 1897:

| | Wheat, bushels. | Corn, bushels. |
|---|---|---|
| Chicago | 9,364,000 | 7,560,000 |
| Duluth | 7,205,000 | 52,000 |
| Milwaukee | 218,000 | 3,000 |
| Detroit | 261,000 | 78,000 |
| Toledo | 850,000 | 1,485,000 |
| Buffalo | 474,000 | 152,000 |
| | 18,372,000 | 9,280,000 |

As compared with a week ago, the above figures show, at the several points named, an increase of 41,000 bushels of wheat and a decrease of 699,000 bushels of corn. Grain afloat at Chicago April 17—Wheat 177,000 bushels, corn 822,000 bushels, oats 490,000 bushels, rye 122,000 bushels; at Buffalo, corn 113,000 bushels, oats 81,000 bushels; at Duluth, wheat 1,019,000 bushels.

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Several hundred photograph negatives of lake ships are held in stock by the Marine Review. Prints can be made on short order.

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Appointments of captains and engineers for 1897, vest pocket size, $1.00. Order from the Marine Review, Cleveland, Ohio.

## Old Revenue Cutter Johnson.

The old revenue cutter Andrew Johnson has left Milwaukee for the Sault, where Capt Davis will arrange a few matters regarding the river patrol before bringing the vessel to Cleveland, next week, for transfer of her crew to the new cutter Gresham. Upon arrival in Cleveland, the Johnson will end her career of thirty-three years in the government service. She will be knocked down to the highest bidder. The Johnson is one of the old type of side-wheelers, built at Buffalo in 1864. In her present condition she would not be of much account in the commercial struggle on the lakes, but there will undoubtedly be a number of bidders at the auction, as some one will find a means of making alterations in the vessel that will permit of her use in either freight or passenger service.

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Two new naval officers will be in charge of light houses on Lake Erie and Lake Michigan after the first of May. Commander C. H. C. Luetze, who has been on the U. S. S. Michigan, will succeed Commander J. H. Dayton in charge of the ninth, or Lake Michigan, district, with headquarters at Chicago. The new inspector at Buffalo, who succeeds Capt. Gridley in charge of the Lake Erie district, is Commander Theodore F. Jewell.

An excellent chart of Green bay and approaches, on a large scale has just been published by the United States hydrographic office and may be had from the Marine Review. The chart is corrected to March 1, 1897, and takes in with Green bay the west shore of Lake Michigan from Manistique to Kewaunee. It will be of great value to masters of Lake Michigan trading vessels, as well as the men in charge of the larger ore and coal carriers trading to Escanaba. Soundings are in feet and there is a scale of statute miles attached. The price is $1.25, but the chart is so complete in detail that it is larger than the single sheet charts of Lake Superior or Lake Michigan.

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On April 23, 24, 25 and 26, the Nickel Plate road will sell excursion tickets to New York, to enable its patrons to attend the dedication of Grant's monument. Return limit May 5th. Ask agents for time of trains and raets. 30 Apl 23

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UNITED STATES ENGINEER OFFICE, Telephone Building, Detroit, Mich., April 17, 1897. Sealed proposals for Dredging Black River, at Port Huron, Mich.; Bar at mouth of Black River, Mich.; Belle River, at Marine City, Mich.; and Clinton River, Mich., will be received here until 12 o'clock noon (Standard time) May 7, 1897, and then publicly opened. Apply here for information. G. J. LYDECKER, Lt. Col., Engrs. May 1


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58 William St. NEW YORK CITY.

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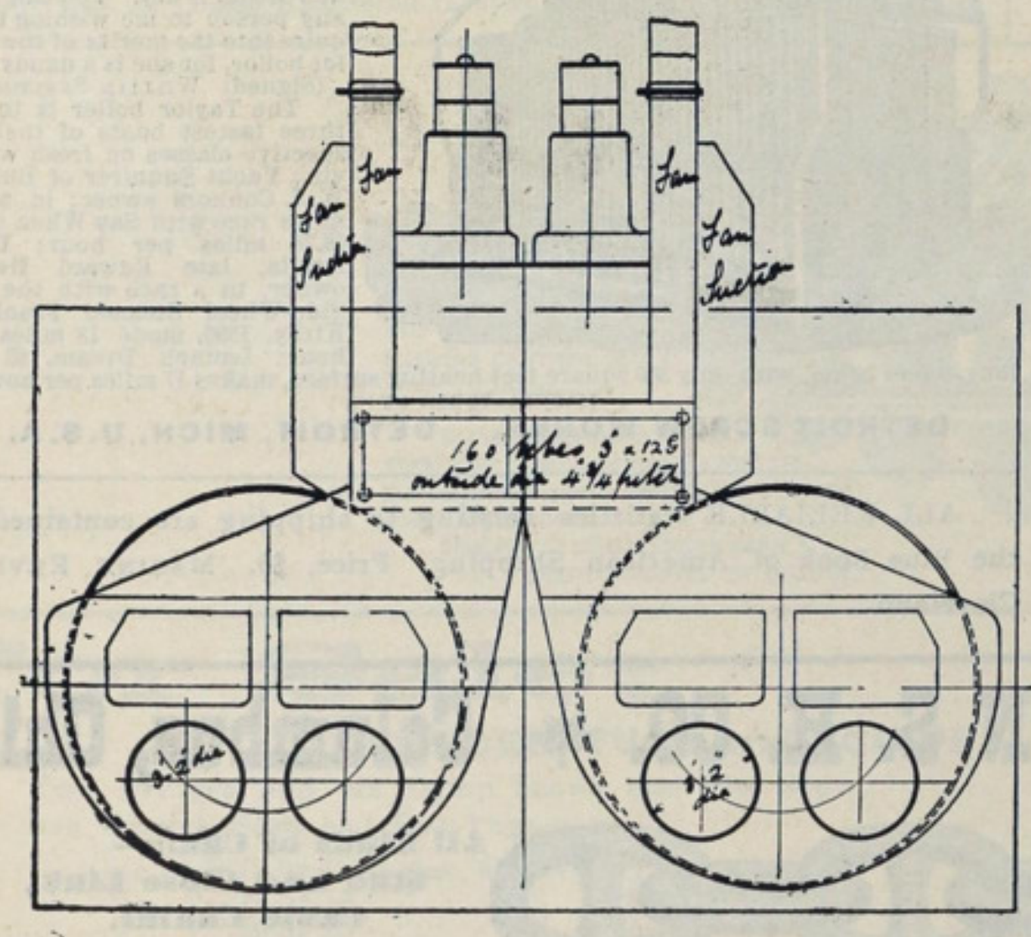


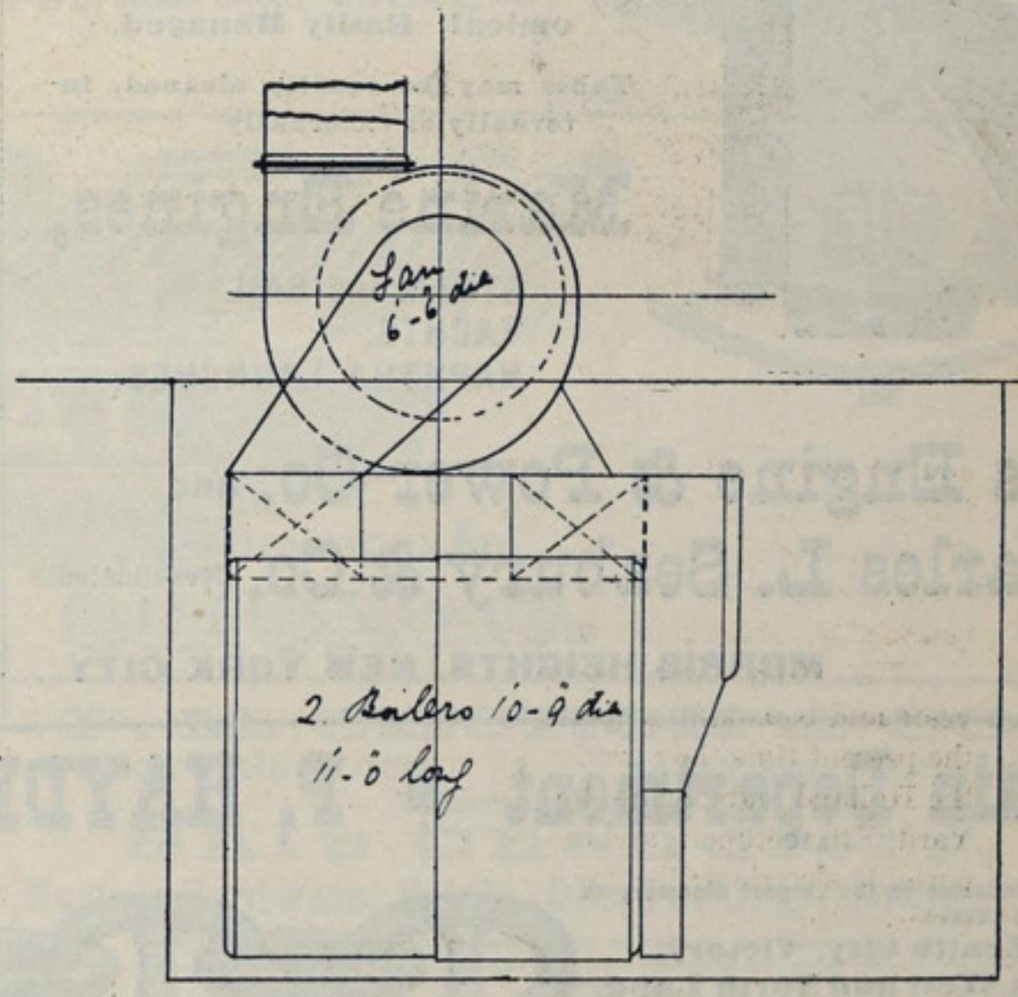


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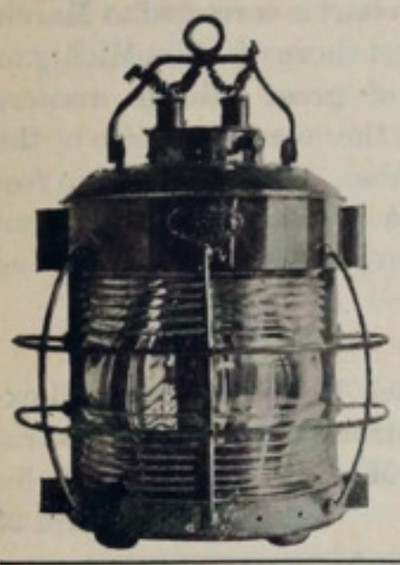

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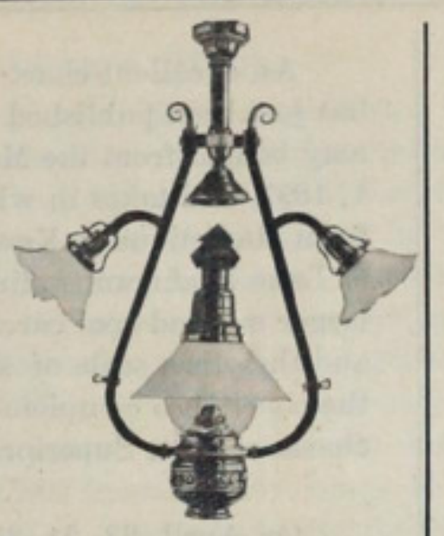

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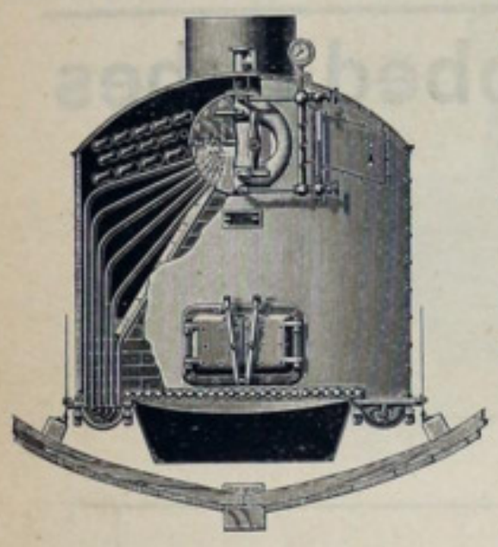

**Reliable, Safe, Durable, Compact, Light Weight, Economical, Easily Managed.**

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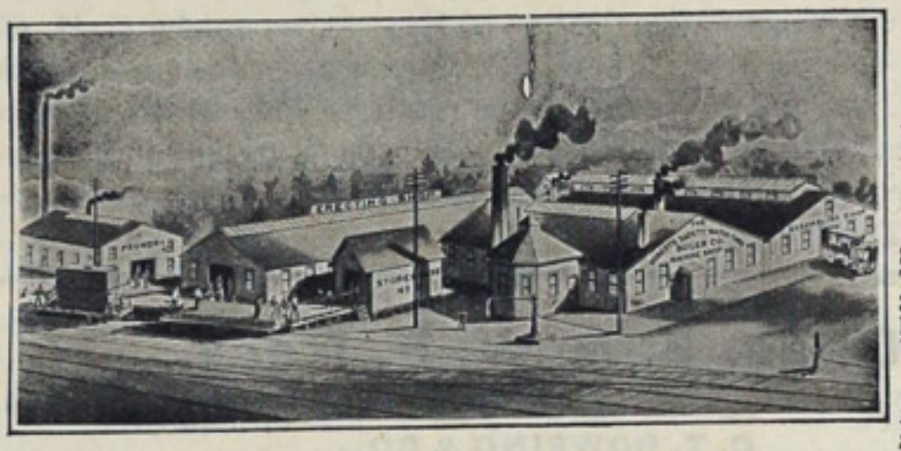

Office of AMERICAN STEEL BARGE Co.

West Superior Wis., Oct. 31, 1895.

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Gentlemen: Replying to yours of the 28th I am glad to say that the boiler you furnished us for tug "ISLAY" is giving entire satisfaction. I have heard no complaint about it whatever, but have heard a good deal in its favor. I ride on the boat frequently and must say that I am much pleased with its work. Very Truly yours, Alexander McDougall, General Manager.

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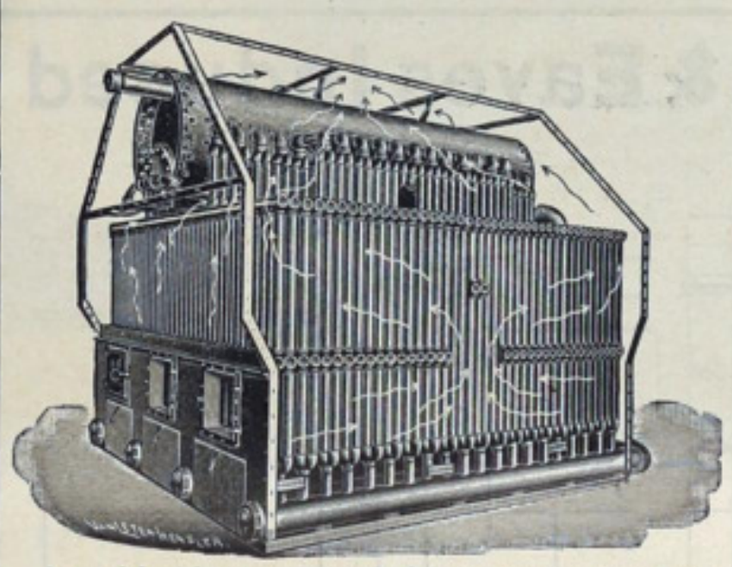

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(Signed) WILLIAM SKELTON, Jr.

The Taylor boiler is in the three fastest boats of their respective classes on fresh water, viz., Yacht Enquirer of Buffalo. W. J. Connors owner; in a 29½ miles race with Say When made 18.78 miles per hour; Yacht Azalia, late Edward Henkel owner, in a race with the fast Side-Wheel Steamer Frank E. Kirby, 1896, made 18 miles per hour; Launch Dream, 63 feet long, 9 feet beam, with only 350 square feet heating surface, makes 17 miles per hour.

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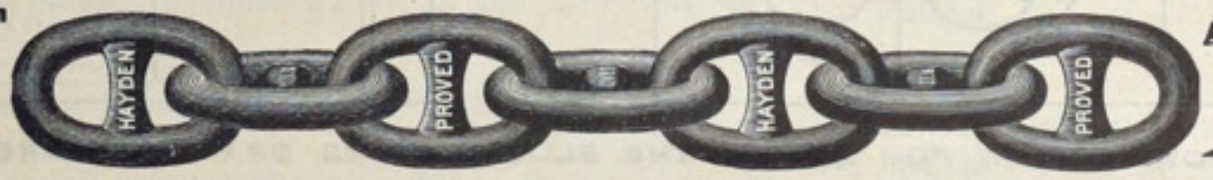


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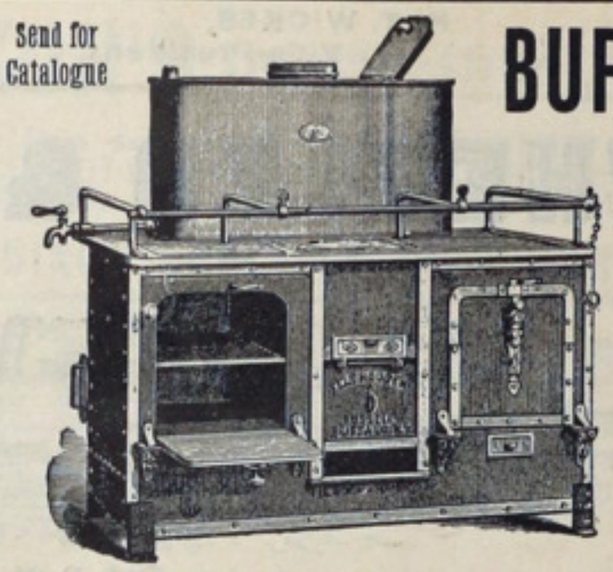

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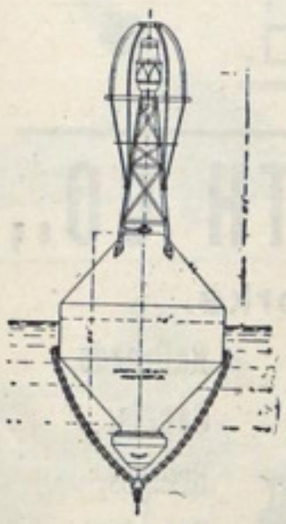

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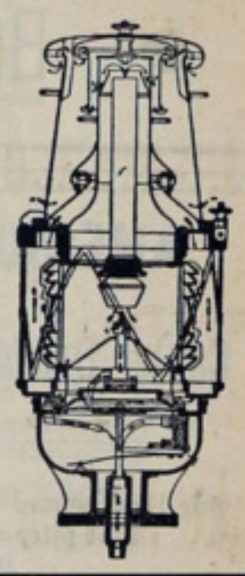

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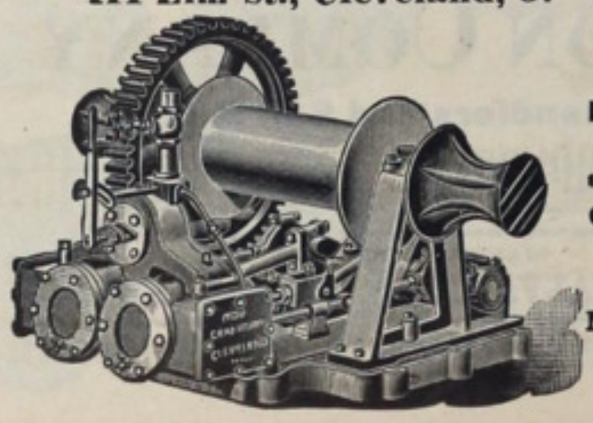

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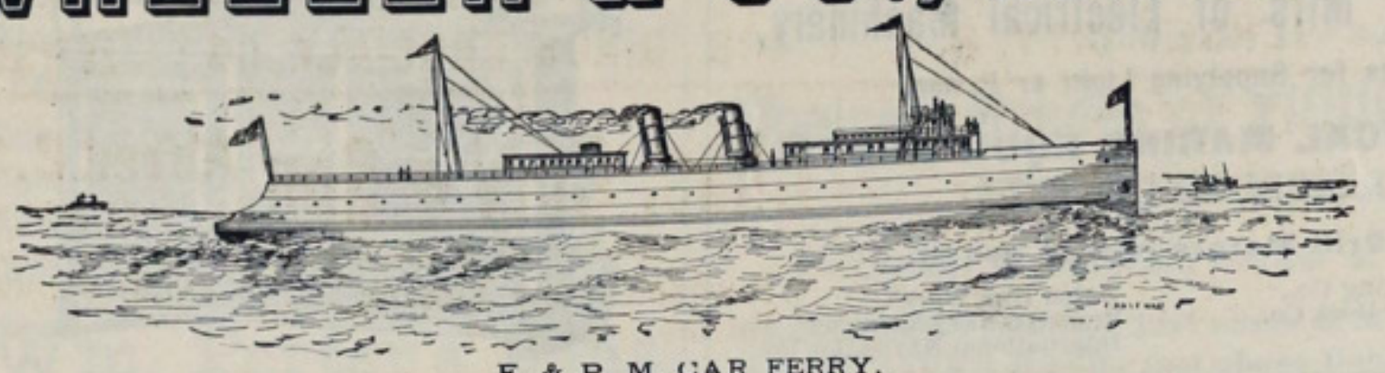

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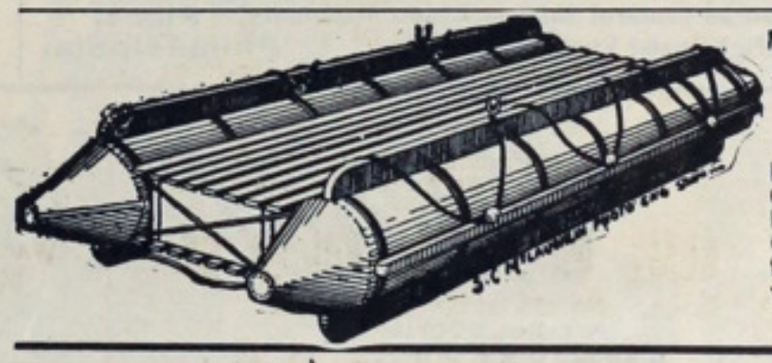

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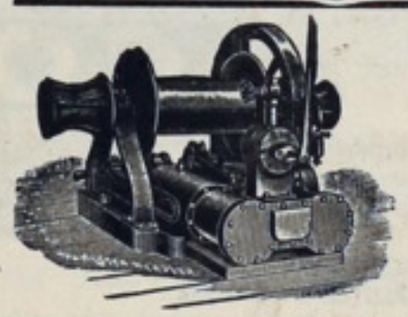

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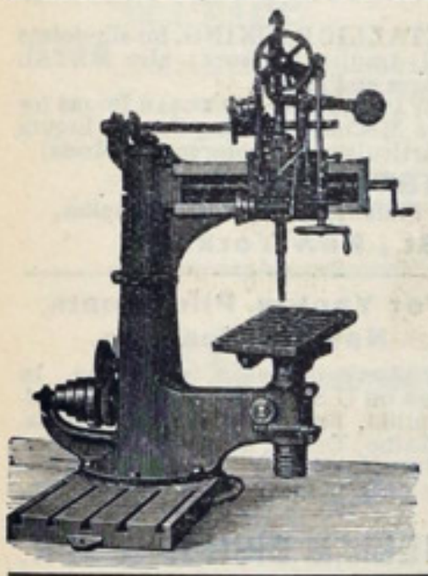

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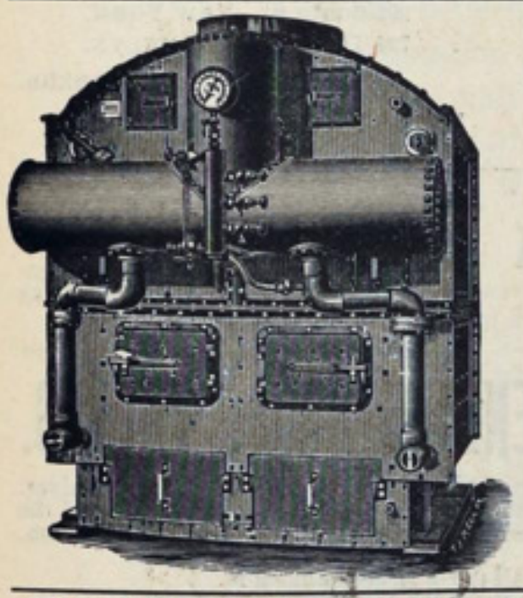

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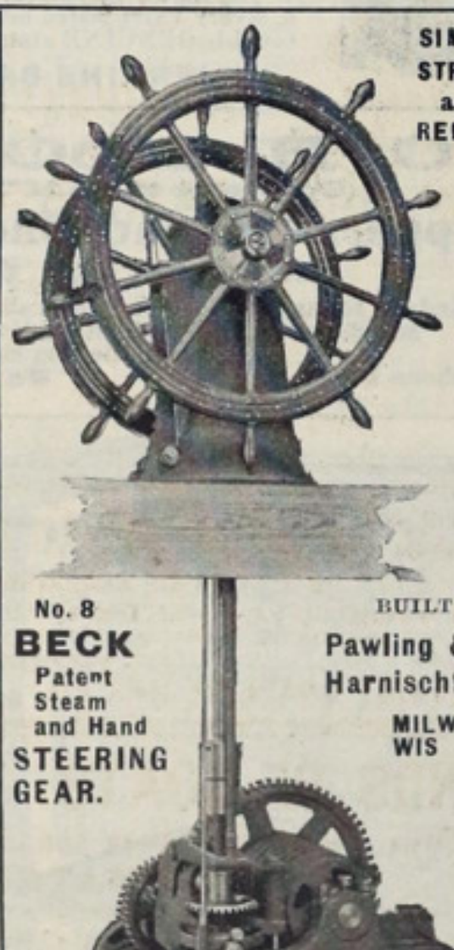

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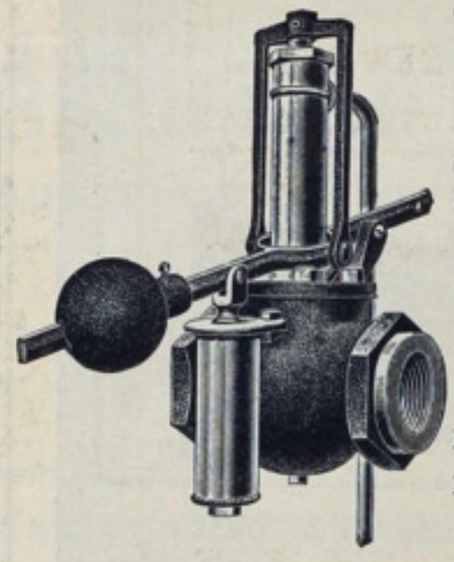

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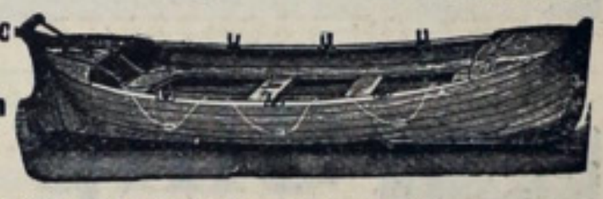

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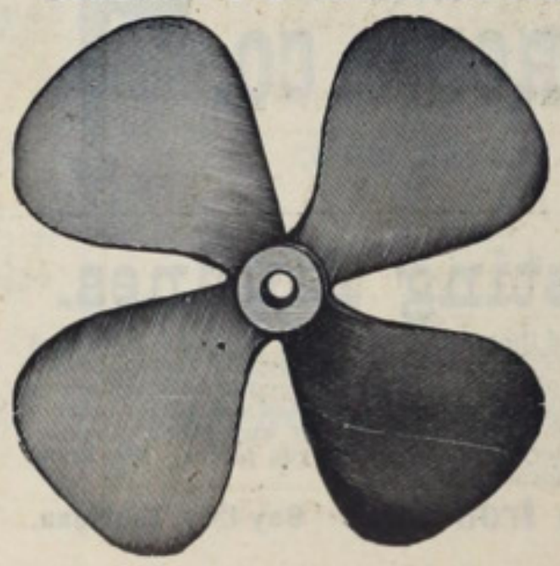

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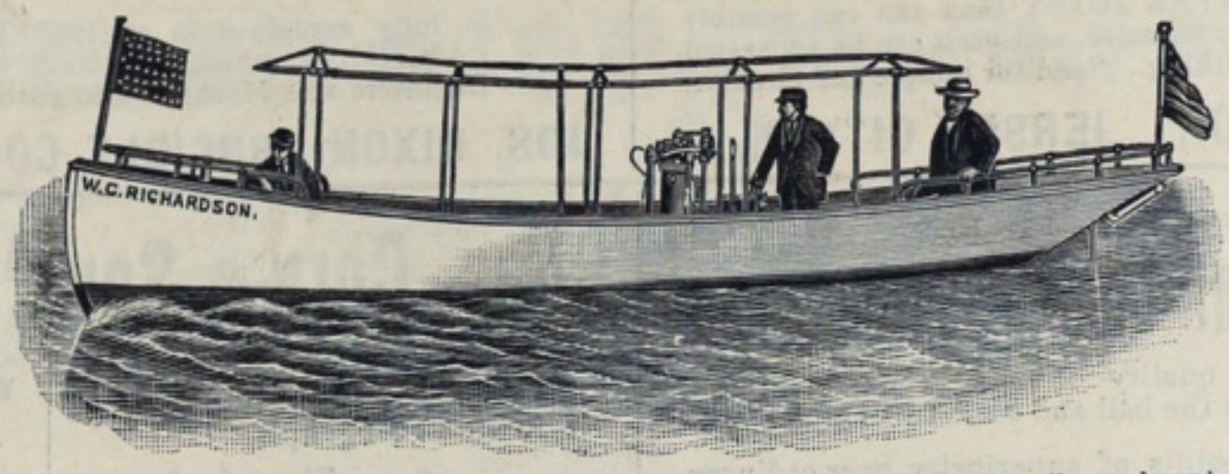


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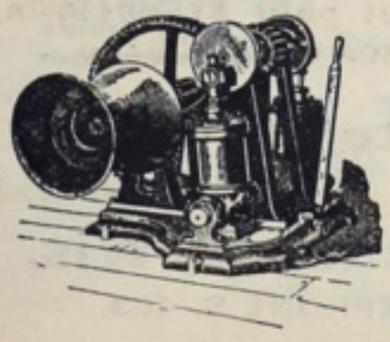

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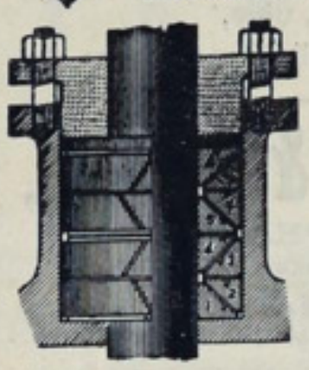

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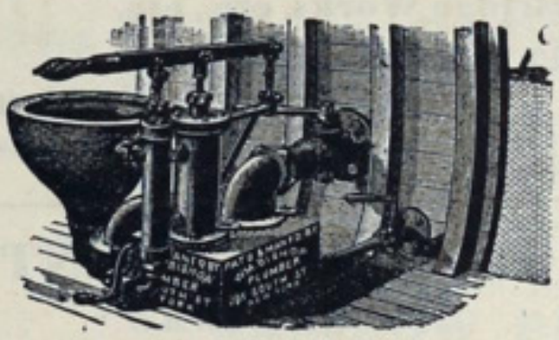

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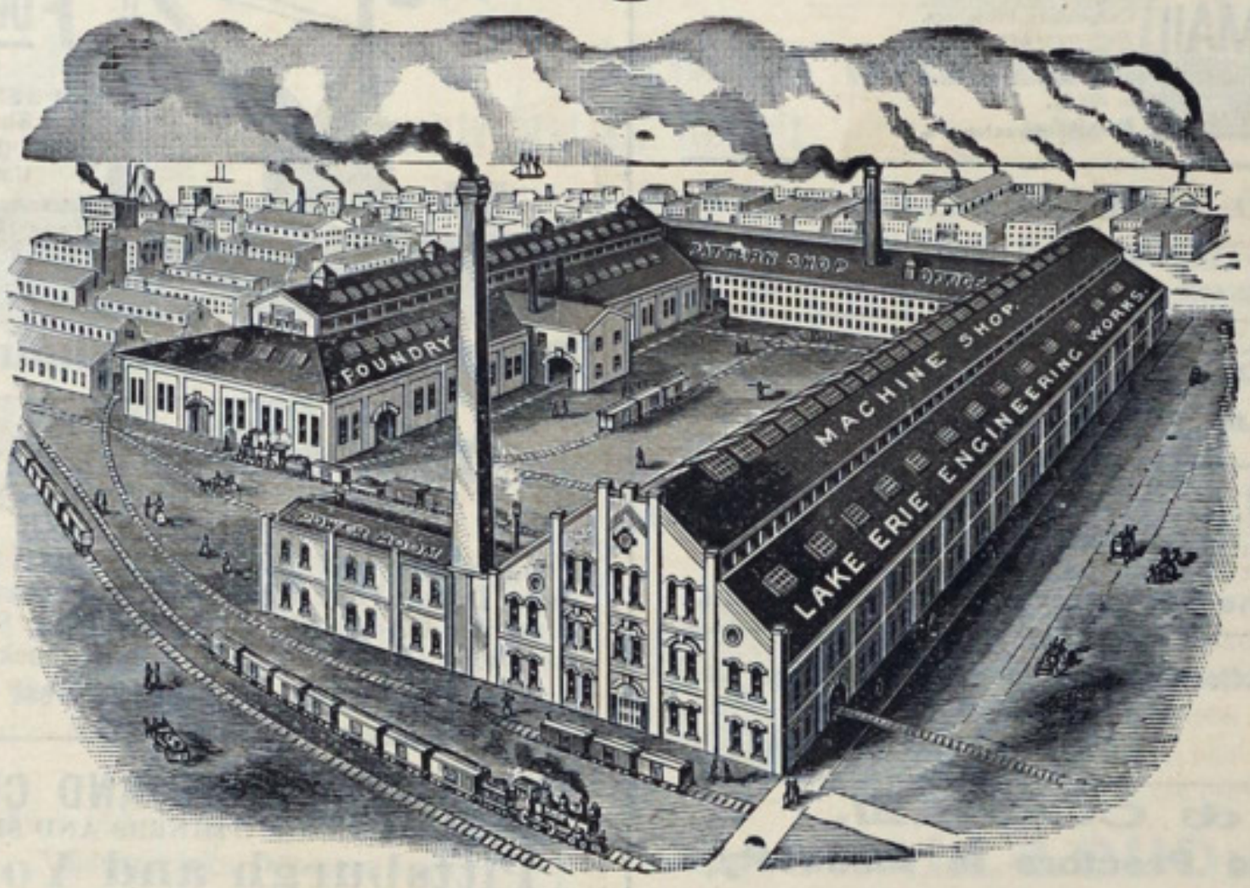


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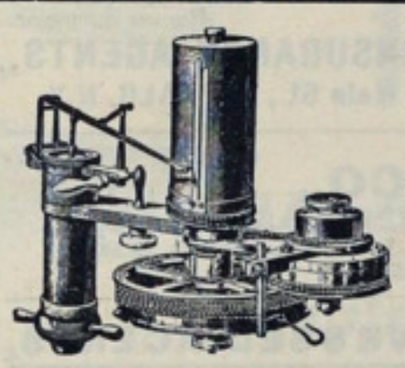

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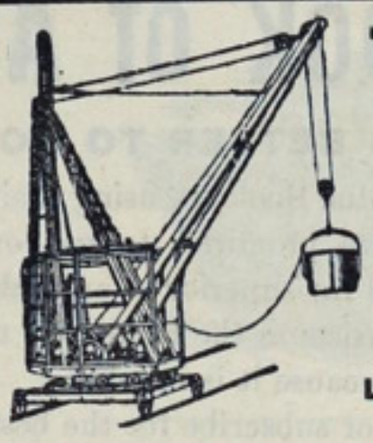

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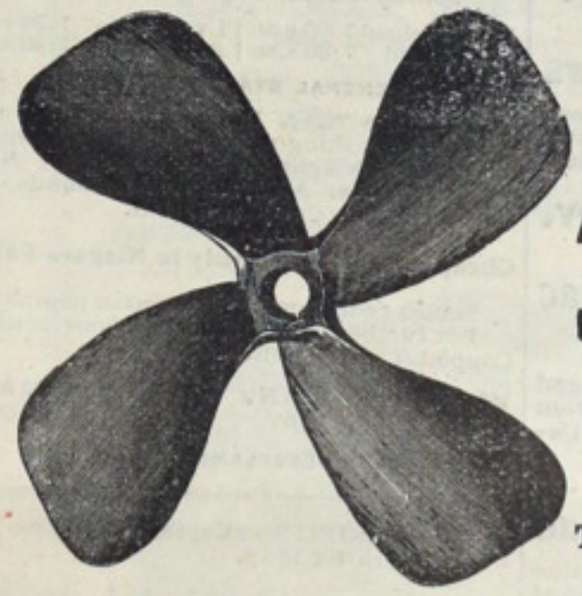

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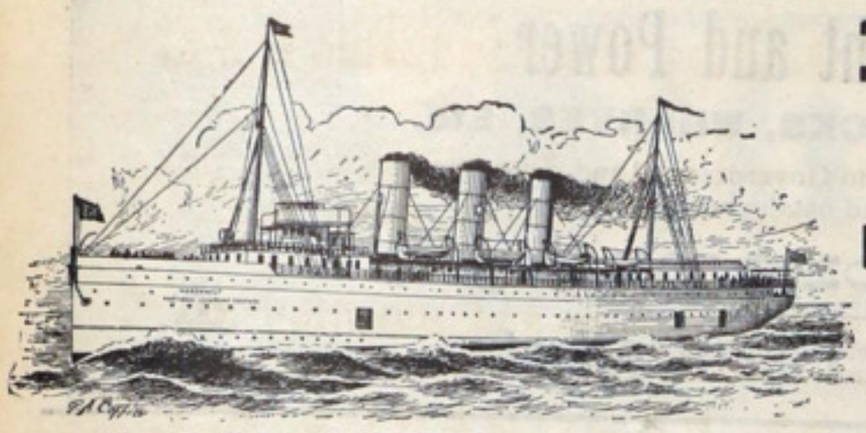

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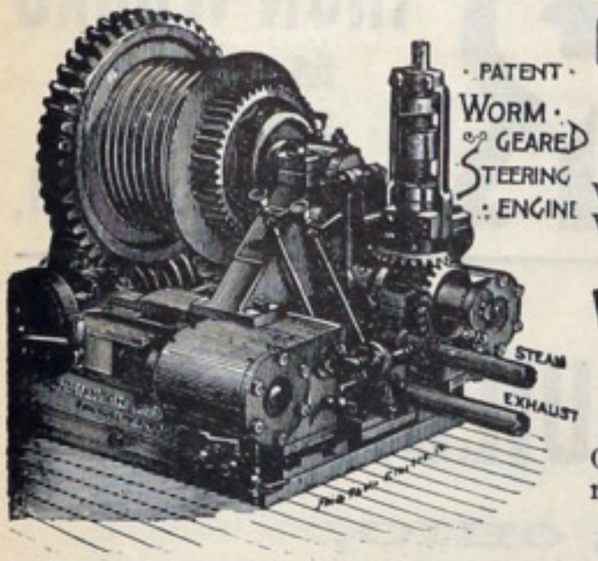


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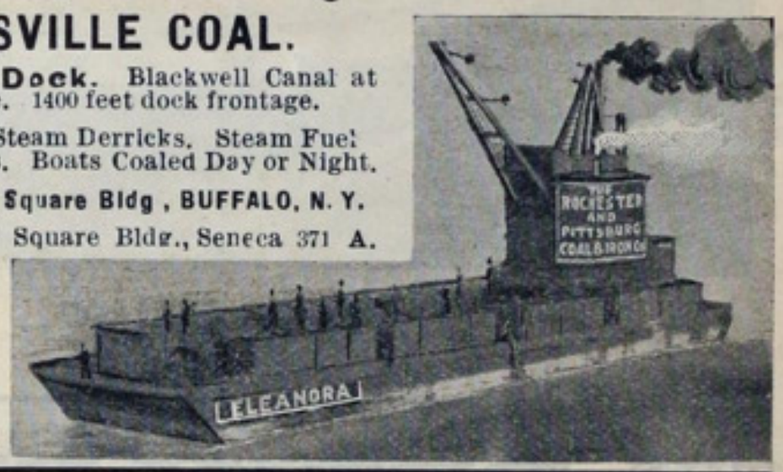
**WM. H. HAZEN,**
Dock Superintendent.

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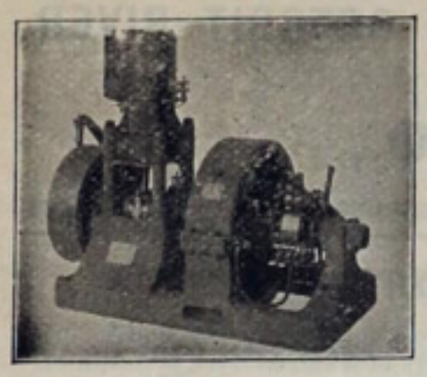
MARINE SUPPLY CO., Fairport, O.
F. KRANZ, Sandusky, O.
THE M. I. WILCOX CORDAGE & SUPPLY CO., Toledo, O



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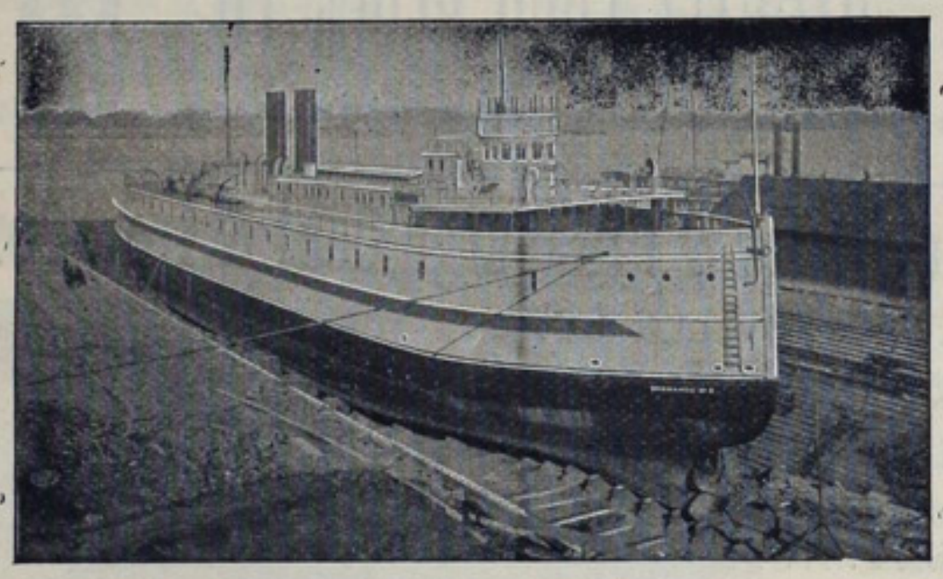

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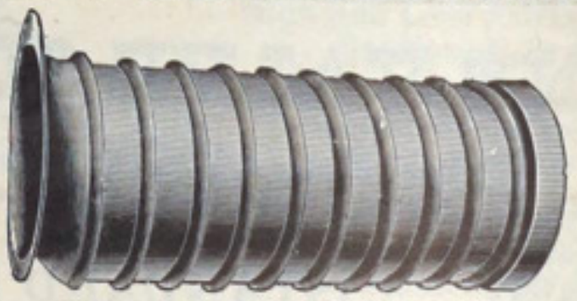
**PURVES' RIBBED STEEL BOILER FURNACE FLUE.**

BACK END.  FRONT END.

With this style of Furnace Flue, the rivets at the "back end" are out of the line of fire, and all that has to be done to remove it is to cut out the rivets at the ends and slip it through the front; and to replace it, simply to slip it back in its place and rivet up the ends again without disturbing any other part of the boiler. No smith work is required to fit it in a boiler or to refit it when replaced. It is ready for use as it comes from the manufacturers. This style of Flue has been in use six years without a single complaint.

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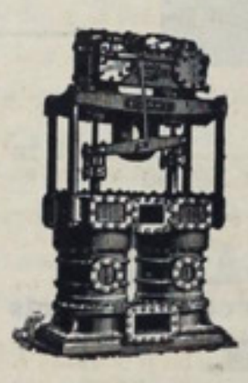

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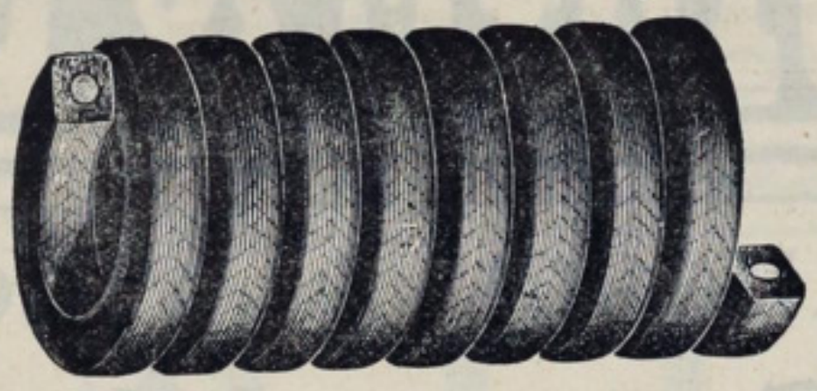

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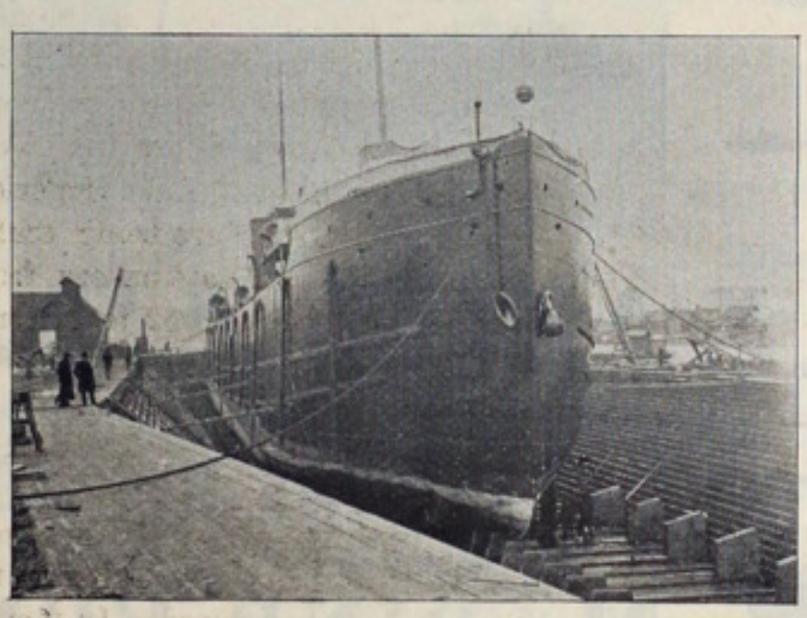

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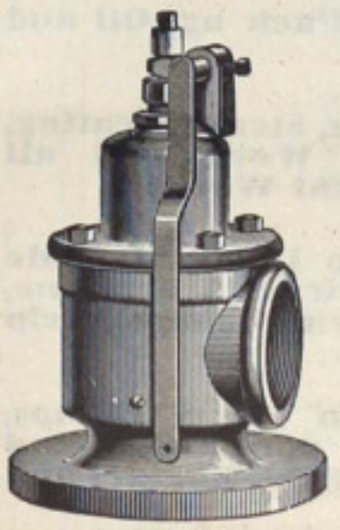

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